

BRITISH PHARMACEUTICAL CONFERENCE.

BATH MEETING.

THE British Pharmaceutical Conference was instituted last year for the encouragement of research in the sciences connected with Pharmacy; for the interchange of useful practical experience; and for the promotion of friendly feeling between chemists and druggists. At the meeting held last year in Newcastle-on-Tyne it was resolved that the meeting for 1864 should be held in Bath during the visit of the British Association to that city.

In accordance with this resolution the 14th of September was appointed for the opening of the Bath meeting. Mr. J. C. Pooley, the Local Secretary, undertook to find apartments for members visiting his city, and the hearty welcome of the Bath chemists will long be remembered by those members.

We were not able to ascertain the names of all the gentlemen who attended the meeting. The following list will, however, show that pharmacy and chemistry were well represented:—

H. Deane, Esq., F.L.S., *President of the Conference*; Dr. Edwards, F.C.S., *Vice-President*, from Liverpool; Mr. H. B. Brady, F.L.S., *Treasurer*, from Newcastle-on-Tyne; Dr. Attfield, F.C.S., and Mr. R. Reynolds, F.C.S. (Leeds), *General Secretaries*; J. C. Pooley, *Local Secretary*; Messrs. Daniel Bell Hanbury; Daniel Hanbury, F.L.S.; S. Gale, F.C.S.; W. E. Heathfield, F.R.G.S.; J. Robbins; J. Wade, W. Symons, F.C.S.; H. Hodge; H. Matthews, F.C.S.; J. C. Brough, of London; S. U. Jones, of Leamington; T. B. Groves, F.C.S., of Weymouth; W. Groves, of Blandford; J. Abraham and N. Mercer, of Liverpool; W. Hearder, of Torquay; J. Leay, of Chilcompton; G. F. Schacht, of Clifton; F. C. Clayton, of Kelvedon; Dr. Parkinson, of Bradford; A. P. Balkwill, of Plymouth; W. W. Stoddart, of Bristol; F. W. Joy, of Cardiff; W. A. Hope, of Wellingborough; F. Roberts, of Stroud; and F. Barnitt, W. Bright, W. Clatworthy, R. Commans, C. Ekin, R. O. Harding, T. Harding, W. C. Jamson, F. W. Kent, J. Raymond King, J. H. Marsh, J. Merrikin, F. Nurthen, M. Parker, J. C. Pooley, H. Rickwood, J. P. Tylee, and W. Walker, of Bath.

FIRST SITTING.

The members assembled on Wednesday, September 14, at 41, Milsom-street, Bath; the proceedings were opened at 10 o'clock. After reading a letter from Professor Bentley, explaining that illness prevented him attending the meeting, the President delivered the following address:—

THE PRESIDENT'S ADDRESS.

It must necessarily be a somewhat embarrassing task to take the chair at a first meeting of this sort. In an older Association, after a few gatherings have taken place, a President might, by consulting the conduct of his predecessors, by walking in the line of their successes as far as lay in his power, and avoiding the shoals on which they might have foundered, possess a fair chance of steering his course to a happy result. As it is, my one advantage is that there is no standard for comparison, though I might, perhaps, add to it the confidence which is inspired by the kindly feeling of those who have placed me in the position I occupy.

I need not enter into the history of the causes which have led to our meeting here. It was a happy thought of those who were instrumental in the organization of this little body, that something might be done towards the promulgation of brotherly feeling and sympathy, not less than towards the advancement of pharmacy in a way which could scarcely be compassed by an existing society, that an Association might be formed in which a social element might be combined, meeting in different parts of the island so as to give all interested in its objects an opportunity for co-operation, and labouring systematically towards the end in view, yet still free from the drawbacks of a complicated constitution and expensive working. The experiment was not an untried one; our brethren on the other side of the great Atlantic had weighed the scheme in the balance of practical experience, and had not found it wanting. And without unduly exalting their example or depreciating our own powers, we may point to many of the researches which have been made under their

auspices as patterns which we shall do well to imitate. That the profession in which we are all interested is in some of its conditions different from its corresponding transatlantic development is a fact which speaks only in the favour of a principle so elastic. If, as some think, we in this country are more divided amongst ourselves, more split up into sections, each section with a different interest, and pursuing it in a diverging line, it is all the more important that a body of neutral politics, open to all, should exist, to bind together the links that ought to form one chain. It seemed to me that this increase of fellow-feeling, of sympathy in its best sense, was no small object at which to aim; but I confess my view did not go further than the boundaries of our own kingdom. It seems that a still wider prospect is open to us, and that we are to become the means of a manifestation of the same idea as relating to two continents. A letter will be laid before you from the Secretary of the American Pharmacopœical Association. Through some accident the engrossed copy of the resolutions alluded to in it has not yet come to hand, but we have their substance in the resolutions recorded in the copy of their Transactions now laid on the table, which, for our purposes, will answer the same end; and I trust that you will see fit to direct that a reply be sent to these, expressing our high appreciation of the offers of friendly intercourse therein contained, and of our desire to move with them hand in hand towards the end we mutually have in view.

Gentlemen, since my youth I have taken, as some of you know, the deepest interest in the same objects as those for which the Conference is established, and when applied to to associate myself with others in its formation, I could only reply, that whatever service I could render them should be cheerfully given. It has pleased you to say that this would be best accomplished by my assuming the chair during this your first year, and however much I might doubt the wisdom of your judgment, I could but bow to the decision.

So many matters of vital interest to our profession have been mooted during the past year, that I could not attempt any succinct review of them without interfering with the important duties of the Conference; I shall, therefore, with your permission, confine my remarks to two or three of the most important. Firstly, the national Pharmacopœia, which has appeared since our last meeting, a matter which some may think has already had ample discussion. Secondly, the state of the law with respect to accidental poisoning. As the last-named is a subject which will come more fully under your notice in the Report of the Committee which will be presented to you, I will reserve a portion of what I have to say to the discussion which may then take place.

In the first place, I may mention the publication of the new British Pharmacopœia, a work which, with many merits characteristic of advancement, has been attended with much disappointment and dissatisfaction on the part of those most interested in its appearance.

The necessity for one national Pharmacopœia in place of three distinct works issued at irregular intervals, and never simultaneously, by the three Colleges of London, Edinburgh, and Dublin, had been for many years a conviction growing and forcing itself upon all concerned in the dispensing of medicines. When in 1855 the Pharmacopœia Committee of the Royal College of Physicians of London requested the co-operation and assistance of the Pharmaceutical Society in the preparation of a new edition of the Pharmacopœia, the Society's Committee then formed thought it highly important that an attempt should be made to induce the three colleges to unite and agree to publish their formulæ in one national undertaking, to be called the British Pharmacopœia; and accordingly our late lamented friend Jacob Bell, with his characteristic energy and determination, made several journeys to Scotland and Ireland, for the purpose of conferring with the leading men of those colleges on the subject, and after some considerable difficulty obtained something like a general acquiescence in the proposal. At the commencement of its labours the Committee made out a list of all drugs, chemicals, and preparations contained in the *Materia Medica* of the three colleges, and had it printed and issued, with certain questions, to every member of the Pharmacopœical Society, with a view to elicit a correct knowledge of what medicines were in use, and to what extent, and what medicines were obsolete or nearly so. A large mass of evidence was thus obtained from all parts of England and Scotland, on the strength of which there was little difficulty in determining

what should be retained and what should be omitted. The next step was to go through the preparations, with a view to revise where needful, to select the processes best calculated to produce the best results, to select the best formulæ where there were more than one under the same or similar names, and to leave the rest to their integrity, to meet the wishes of prescribers in each country; at the same time it was intended to add formulæ for every new preparation that could be said to be fairly established. The result would have been a very comprehensive work, adapted to all requirements, and interfering but slightly with the routine of medical practice or public demands and prejudices, with none, or very few, of those violent alterations which have taken us all by surprise in the book now before us.

No doubt those who have had the framing of the British Pharmacopœia have had many and great difficulties to contend with in the reconciling of prejudices; and in doing this, probably to a much greater extent than was desirable or necessary, a series of compromises has been made, breaking up many old-established and popular formulæ, and omitting others, whereby dispensers and venders of medicines are placed in a very false and difficult position, besides being involved in needless expenses to meet the new order of things. It must still, however, be borne in mind, and this does not seem to be generally understood, that many of the formulæ and preparations that stand so conspicuously before us now, are essentially Scotch or Irish, and, as such, are little more likely to be prescribed in England for a long time to come than they have hitherto been. In this respect we are more frightened than hurt, as will be rendered evident to any one who will take the pains to go carefully through the new book with the Pharmacopœias of Edinburgh and Dublin, and putting E. or D. against the respective formulæ.

The extensive alterations made in such old and popular remedies as decoction of aloes, tincture of rhubarb, tincture of senna, confection of senna, infusions of orange and gentian, ipecacuanha wine, liq. ammon. acetatis, &c. &c., are quite incomprehensible, and to many minds very pernicious and needless. The extracts, both solid and liquid, have had a large amount of labour bestowed upon them by the Committee of the Pharmaceutical Society, who spared no pains to render their work complete and efficient. Much of their recommendation was adopted, and others altered, to meet the views and wishes of the medical profession. Indeed, every portion of the work has been attended with great labour and expense.

An attempt has evidently been made to render the tinctures more uniform in character and strength; but there are some curious inconsistencies, of which tincture of arnica, now introduced, is an illustration. The preparation is universally known, having been brought prominently forward by the homœopaths, and is made with one part of root to ten of rectified spirit; but the new Pharmacopœia tells us to use one in twenty! Why deviate from an established formula? Morphia lozenges, and morphia and ipecacuanha lozenges, which for many years have been made to contain $\frac{1}{21}$ of a grain are now to be $\frac{1}{15}$. The change may be safe, but was it needed?

On the chemical portion of the work a great amount of skilful labour has been bestowed; still there is room for improvement, and much work is cut out for such members of the Conference as are willing to undertake it.

The alteration of the weights from troy to avoirdupois possesses two great advantages; first, that all confusion between the two weights is done away with, and secondly, in the circumstance of an ounce avoirdupois being just the weight of a fluid ounce of water,—but here the advantage ends. The ounce of 437.5 grains not being divisible without inconvenient fractions, its practical utility is greatly diminished. Thus, $\frac{1}{2}$ drms., 30 grs., $\frac{1}{16}$ of an ounce troy is much more convenient than $\frac{1}{4}$ of a quarter of an ounce av. = 27.3. Thus, anything like facile accuracy is almost impossible in many cases. The old weights of fractional parts of an ounce troy are ordered to be set aside, but their convenience and the facility with which they are used will never allow them to go out of use, and, the grain weight being the same, there is no necessity for it until a true decimal system be adopted. They are simply weights of so many grains, whose characters are easily written, and with no greater, perhaps less, liability to error than Roman numerals.

The introduction of the modified process of percolation

and maceration in making tinctures, &c., is good, and likely to be more generally useful than a strict adherence to simple percolation, which in many hands is difficult, and involves some curious errors of manipulation.

With regard to the omission of old-established formulæ for preparations, most of which are in constant use and demand, I cannot but express my regret, feeling, as I ever have done, that an authorised formulæ for every established preparation *in use*, whether by one section of the medical profession or another, or by the public, and whether they have ever been in a pharmacopœia or not, should form an integral portion of any national pharmacopœia. These omissions are much to be regretted, and are a source of much disappointment and dissatisfaction amongst a large number of our professional brethren.

The omission of doses, as authorised in the translation of the old Latin edition, too, is much more serious than the framers of the book are aware of, and may lead to disaster, when the dispenser can no longer correct the clerical errors of prescribers by some authorised rule or standard.

However, with all its imperfections, which fall heaviest on England, the new British Pharmacopœia has marked improvements, which place it far above all its predecessors. Let us make the best of it, and do all we can to promote and ensure an improvement in every future edition.

The next subject I have to refer to is one the importance of which to us, as responsible persons in the sale and dispensing of medicines, it is scarcely possible to overestimate. It is one so large, complicated, and difficult, that I am quite incompetent to lay it before you in that clear and logical manner it requires to impress you fully with its importance, and I am inclined to think it would be well for us to endeavour to fix on a day for its full and free discussion. At the present time, I will simply refer, in as few words as possible, to a recent disastrous case of poisoning at Liverpool, and leave the question of the sale of poisons, which arises out of that case, and the Report on Public Health, for future discussion.

The result of the trials on the late case, the acquittal of the assistant, who is supposed to have dispensed the medicine, from the charge of manslaughter, on the score of its being a pure misadventure, and the unavoidable compromise with the friends of the deceased, show that every one of us is standing on a mine which may at any moment explode, and send us to pecuniary perdition and despair. It matters nothing what amount of care and expense has been bestowed on arrangements to secure the public from accident; it matters not that the proprietor of an establishment is in no way to blame, or that the patient has died through a pure misadventure, the law requires that a jury *shall* award compensating damages to the injured family. We all know what that means to nineteen in twenty of those following the business,—it means *utter ruin*.

Allow me to state our case and position in society, as an important branch of what is called a liberal profession. In the first place—

All the responsibilities of professional men are laid upon chemists, without either the dignity or emolument. We are treated as shopkeepers, with profits less than those of an ironmonger.

Rich and poor of all grades do not hesitate to consult them in all sorts of difficulties, and obtain freely and gratuitously that for which a physician or consulting chemist would charge a handsome fee.

That the information thus freely accorded to all is truly valuable is proved by the fact of the constancy of the practice, and the needless jealousy of many professional men.

To obtain this amount of public confidence, a large expenditure of means, careful observation, energy, study, and integrity of purpose are required.

The more extensive the business of a chemist, the greater the responsibility; but not so the profits.

When the public confidence is secured, it is the interest of the chemist to maintain it by all and every means in his power.

Foremost amongst the means are the obtaining good assistants, and making such arrangements in the establishment as shall, as far as practicable, obviate all chances of accident, and ensure the detection of errors, and the sources of them. Having done this, and exercising constant watchfulness, all that a man can do has been done. Proof of

successful care is shown in the small number of known errors made by dispensing chemists.

Thus, a man may dispense 50 prescriptions daily, on an average of 300 days in a year, equal to 15,000 prescriptions, each of which will average 10 doses, or 150,000 doses annually! He goes on thus for many years, and never has the faintest trace of an accident arising from any fault or oversight of his own, and for which he rarely gets a fair share of credit. But during those years he has probably corrected numberless errors of prescribers, many of them of no trivial nature; but for this he has no credit, professional etiquette requires he should be silent. If the skill and foresight of the dispenser were not habitually turned to such contingencies, serious accidents would frequently be recorded. Hence, the educated and careful dispenser, in the exercise of his skill, tact, and judgment, in avoiding the dangers incidental to his grave and responsible duties, is a benefactor to the community, and deserves better pay and higher consideration than the world is disposed to give. Yet a man, though gifted with clear intellect and sound discretion, and possessing a thorough knowledge of his business or profession, cannot after all claim exemption from that common imperfection of humanity—fallibility, and is not a bit less liable to error than the professedly more highly-educated man who writes prescriptions, or the patient who carelessly takes up an opium liniment and swallows it for a black draught, without exercising that common sense which we may safely state is the only true preventive of such accidents.

No regulations could be devised nor Act of Parliament enforced to prevent a physician from making a wrong mark, which might lead to fatal results, nor prevent the recurrence of such facts as the following:—

A lady of our acquaintance lately took into her hand an oval, fluted, half-pint bottle of chloride of zinc, having thereon a large red label, and Poison, in large red letters, on the top of the bottle, and took a dose therefrom, instead of from a round pint bottle, having a small plain label, which she had used for two years for a soothing syrup in daily and frequent use.

Another lady of our acquaintance went to a cupboard where medicines are kept on a middle shelf to procure a dose of fluid magnesia, but instead of taking the proper bottle standing before her face, got a chair and took a bottle of chloride of zinc from a distant corner of a top shelf, and, in spite of the red label and the word Poison, took a dose, which killed her in a week.

Such cases can be quoted by the dozen, together with numberless little inexplicable instances in daily life, of temporary absence of common sense, which serve to prove the frailty of human nature, and how powerless all rules and regulations must be to prevent their recurrence entirely.

The case at Liverpool brings all these considerations before us in the most vivid manner. No men amongst my acquaintance in the profession have taken more pains to render their dispensing establishment a model one than the defendants; none can take more pains to secure good assistants than they have done; yet a calamity has fallen upon them in a most inexplicable manner. A customer dies from the effects of a dose of strychnia, supposed to have been supplied instead of James's Powder from their pharmacy. The assistant who compounded the prescription is tried for manslaughter, and acquitted, because it was a mischance,—a just verdict. His principals are sued for damages, laid at £10,000! which they were preparing to defend, when it was discovered the law as laid down in "Lord Campbell's Act," compelled the jury to award damages in compensation to the friends of the deceased. Thus in the operation of an unjust law, the proprietors of an old establishment, as perfect as human forethought could make it, and who were perfectly innocent of the death of their customer, were forced to compromise the affair by paying £1500 to the widow and children, and £500 or £600 for law expenses.

Is a man to suffer destructive and ruinous spoliation because his assistant is not more than human? It is monstrous injustice. Who is safe amongst us if a ruinous prosecution is to follow an accident, however sad and fatal it may be, which may any day occur to any one of us,—a class of men proverbially and necessarily careful for their own existence's sake? And who will enter a profession liable to such fatal responsibility?

A general practitioner may, and does make numberless

mistakes with impunity, because the facts are confined to himself and his own surgery. The eyes of the physician and the public are not on him or his dispenser, to stimulate to vigilance and care; thus few accidents under such circumstances ever see the light, and perhaps it is well it should be so. But cases occasionally do come before the public which contrast most favourably for the order and care exercised in every well-regulated pharmacy.

The prosecutor in the Liverpool case was probably led away by the popular delusion that every chemist's profits are enormously large, and that they must of necessity get rich out of the public,—not being aware that one-half of the chemists in the country do not, as a gross return, take 20s. per day, or £365 per annum; and that the net profit earned by the other half little more than sufficed to keep soul and body together. Very few save anything, and fewer still enough to retire upon in their old days. It is questionable whether one in a thousand can save, by the legitimate exercise of his business in the course of a laborious life, so much as £10,000. And if a man in the course of an honourable and useful career has saved as much or more, it is no reason why he should be robbed of the same, and simply because he has it; for a man known to be poor would not be prosecuted.

Although it is now shown that the law makes the employer of an assistant responsible for the acts of the latter, I am at a loss to conceive on what principle of justice it is so, when it can be shown that no pains have been spared to prevent accidents. If the assistant were a lifeless machine of man's construction, and a man the worker of it, I can well understand how he would and might be solely responsible for the lives of all risked by its use. Again, it seems a monstrous thing that the only guilty party should be acquitted, and the perfectly innocent employer mulcted of £2,000;—a sum that it would probably ruin three-fourths amongst us to have to pay. Every one henceforth will be in constant danger and dread of some calamity befalling him, which may at once reduce him from a position of honour and comfort to one of perfect destitution and misery. Without some change in the law, this must ultimately lead to the abandonment of the profession by educated and high-minded men, and their places being taken by others, ignorant and reckless, and thus public safety will be jeopardised. The twelve pence now demanded for as many doses of pills, can only be adequately replaced by a sum equal to the fee of the prescriber, for it is clear we have the responsibility of two professions on our shoulders, which ought in common justice to be paid for.

For some admirable remarks on this case, I may refer you to the *Liverpool Daily Post*, of August 16th last, where you will find much that I have said, and a deal more, stated in the most lucid and forcible manner; and it will be seen how unjustly Lord Campbell's Act may be brought to bear upon a particular class of the community, and in cases where it could never have been intended it should take effect. I cannot refrain from quoting one passage, for reasons which I will not record here:—"Nay, more unlikely things have happened than for a man to commit suicide after surreptitiously mixing poison with a dose from a chemist, and so virtually bequeath to his family the damages obtainable by an action under Lord Campbell's Act. The deed is an unlikely one; but as the Insurance Companies deem it worth while to except suicide from the causes of death allowed by their policies, our supposition is not beyond the bounds of possibility."

I must now conclude, but it would be wrong in me to resume my seat without saying how greatly we are indebted to our members in this city, and especially to our local secretary, Mr. Pooley, for the energetic kindness they have displayed in welcoming the Conference on the present occasion, and in making arrangements not only for the comfort of the members, but for the convenience of the meetings. I am sure we all feel how much we owe to them in this matter.

And now, gentlemen, I must bring these remarks to a conclusion. The subjects which will be brought before you for consideration and discussion will be many and various. In scientific subjects, and in matters of fact, the end of all discussion is simply the elucidation of the truth; but there are other questions which may come under your notice, in which the balance of opinion must hold the sway; and with respect to the discussion which may take place in this room,

you will perhaps not consider me sermonising if I quote the words of a great man, spoken, it is true, with reference to religious matters, but none the less applicable in their spirit to those of secular bearing:—"In essentials, *unity*; in non-essentials, *liberty*; in all things, *charity*."

This address was delivered to a most attentive audience, and elicited frequent expressions of approval. On resuming his seat the President was warmly applauded, and formally thanked by the meeting for his able and opportune remarks. The vote of thanks was proposed by Mr. Tylee, and seconded by Mr. King.

Dr. J. B. Edwards read a resolution of the Liverpool Chemists' Association appointing Mr. Abraham and himself delegates to the Conference, and offering the body a hearty welcome whenever it should think fit to visit Liverpool.

The following report was read:—

"REPORT OF EXECUTIVE COMMITTEE.

"At this, the first Annual Meeting of the Conference since its formation at Newcastle-upon-Tyne, your Committee have but a very short Report to lay before you. Its first business consisted in issuing a general circular of invitation to membership, accompanied by an account of the establishment of the Conference. Upwards of 150 gentlemen responded to that invitation, and have been enrolled as members; a list of them is in your hands. The Committee next drew up a list of subjects requiring investigation, and requested members to accept one or more and report thereon to the Annual Meeting. The result is that twenty-eight papers have been received—every one of considerable pharmaceutical interest; they will be read to you at the present and subsequent sittings of the Conference. In addition to the papers, a Report of the Sub-Committee appointed to consider the best means of preventing Accidental Poisoning will be brought before you."

Its adoption was moved by Mr. Jones, seconded by Mr. Bright, and carried.

The Treasurer's statement of accounts was presented and accepted.

The Treasurer in Account with the British Pharmaceutical Conference. Account made up to August 31, 1864.

Dr.	£ s. d.	Cr.	£ s. d.
To 108 Subscriptions for the year 1863-4 ..	27 0 0	By Account for Printing ..	10 17 6
To 45 Subscriptions for the year 1864-5 ..	11 5 0	" " Stationery ..	3 1 9
		" " Postage ..	7 8 3
		" " Advertising ..	3 8 6
		" Expenses connected with Preliminary Meeting at Newcastle ..	2 9 0
		" Petty Disbursements ..	0 7 4
		" Balance in hand ..	10 12 8
	£38 5 0		£38 5 8

1864.
August 31, Balance in hand 10 12 8
22 Subscriptions for 1863-4 (still unpaid) .. 5 10 0
110 Subscriptions for 1864-5 (still unpaid) .. 27 10 0

£43 12 8

Audited and found correct,

R. D. COMMANS,
CHARLES EKIN.

BATH, September 12, 1864.

The first paper brought before the meeting was one by Mr. C. R. C. Tichborne, F.C.S. It was read by the Secretary Dr. Atfield, whose lively and emphatic delivery was frequently exercised during the sittings of the Conference, owing to the absence of authors. The following abstract* gives the substance of Mr. Tichborne's paper:—

"ON THE EXTRACTION AND PRESERVATION OF AROMATA. BY C. R. C. TICHBORNE, F.C.S., CHEMIST TO THE APOTHECARIES HALL OF IRELAND.

"Observing the preservative powers of glycerine for vegetable substances, the author packed different kinds of scented flowers in jars, and covered them with glycerine. In this way he had kept some for two years. If flowers, etc., so preserved be pressed, it is found that the glycerine has absorbed all the volatile oil, and when diluted and distilled

furnishes a water in all cases superior to that from flowers preserved by salt. If the odoriferous glycerine be diluted and agitated with oils or fat, ointments, etc., of excellent quality are produced. In these cases the glycerine is recovered by mere evaporation of the water from it. The delicate oils of orange, jasmine, heliotrope, etc., are best isolated by steeping the flowers in the glycerine, pressing, and again steeping more flowers, and so on; finally diluting with water and shaking with chloroform, which removes the oil. The low boiling point of the chloroform admits of its being separated from the oil by a temperature which does not injure the oil."

Mr. D. Hanbury observed that the author's suggestions might be divided into two classes, those relating to the preparation of distilled waters, and those which had reference to the isolation of the more delicate volatile oils. He feared that the price of glycerine was too high and the difficulty of recovering it too great, for it to be used in the preparation of elder-flower or rose water. A handy process for obtaining essential oils which might be substituted for the troublesome method of *enfleurage* was a desideratum, and Mr. Tichborne's might be available. His friend Dr. De Vry, when in Java, had extracted minute quantities of very delicate odoriferous oils from native plants by the use of ether. If glycerine could be employed by travellers for preserving these rare odours, it would be a most valuable agent.

Mr. Reynolds, referring to the author's objection to the use of salt, said that the quantity of chloride of sodium in elder-flower water was scarcely appreciable, and all would admit that the water made from salted flowers was superior to that made from fresh.

Mr. Abraham said that it had better keeping properties.

Mr. Pooley believed that it had also a finer odour.

The President agreed with the previous speakers as to the desirability of using salted flowers in the preparation of the distilled waters. The salt did not come over when a properly constructed still was employed.

"ON COMMERCIAL CARBONATE OF BISMUTH. BY MR. C. UMNEY.

"Commercial carbonate of bismuth having been suspected to be contaminated by basic nitrate, the author had analysed six samples, and gave in his paper the numerical results. In one case no nitrate was present, and the other five contained but small and probably accidental quantities.

"In preparing carbonate of bismuth, by precipitating a solution of the nitrate by an alkaline carbonate, carbonate of soda was preferable to that of potash, but carbonate of ammonia with subsequent ebullition yielded the purest precipitate."

The President was glad to find the results of Mr. Umney's investigation were so satisfactory.

"ON THE PHARMACEUTICAL APPLICATIONS OF GLYCERINE. BY MR. F. BADEN BENDER.

"In this paper a short history of glycerine was given, and a *résumé* of its applications in pharmacy. The preparations known as 'Plasma,' in which glycerine with starch is substituted for lard, as a basis of ointments, had been made the special subject of experiment by the author. He had found *tous-les-mois* starch superior to any other in making the simple plasma. Fifty grains of *tous-les-mois* were to be rubbed with one ounce of glycerine, and the mixture heated to 240° for a few minutes, or till it became translucent. He thought that plasma might replace lard in ointments having a tendency to become rancid, but its relatively great expense would preclude its general adoption. The 'glyceroles,' or solutions of different substances in glycerine, were then noticed. A good 'tincture of myrrh and borax' could be made by dissolving one part of borax in two of glycerine, and adding tincture of myrrh. As substitutes for syrup, the glyceroles did not appear to possess any superiority. The use of glycerine as an excipient in pill-making was strongly advocated."

The President said he had assisted in a systematic examination of plasmata some time ago, when it was found that the most carefully prepared specimens became mouldy in a few months. As an excipient in pill masses, glycerine should be sparingly used, for it frequently caused pills which were quite firm when first made, to run flat.

* We are indebted to Dr. Atfield for the abstracts included in our report. Some of the papers will be printed without abridgment, in future numbers of this Journal.

Mr. Abraham thought that the lard ointments had been too hastily condemned by the author, for when carefully prepared from freshly-rendered lard they were not apt to become rancid. Glycerine had the property of irritating the skin to some extent, and might do harm in ointments. It had been proposed as a solvent for extract of Calabar Bean in ophthalmic medicine, but it was found to irritate the eye.

Mr. Brady referred to a French preparation of tar and glycerine which had been much used in skin diseases, instead of the Unguentum pieis liquidum of the Pharm. Lond. He had not been able to find a formula for this preparation, but had obtained a somewhat similar product by the use of starch and glycerine.*

Mr. Walker stated that he had used an essential oil to dissolve tar with good results.

Mr. D. Hanbury, referring to a remark made by Mr. Abraham, said that there had been some difficulty in finding a solvent for the extract of Calabar Bean. The most concentrated glycerine took up a large proportion, but the solution was not quite bright. If aqueous glycerine was employed, only a very imperfect solution could be obtained. He had the authority of many ophthalmic surgeons for saying that glycerine caused smarting when applied to the eye. He wished to know in what respect foreign glycerine differed from Price's.

Mr. Ekin, on the authority of Mr. Bengel, stated that some foreign glycerine when diluted soon became acid, which was not the case with Price's.

Mr. Reynolds believed that the worst impurity of the foreign glycerine was a volatile organic principle having the smell of conia. Some of the best samples were alkaline when received, gave off the volatile principle when heated, and left 3 per cent. of ash, containing chlorine, lime, alumina, and other bodies.

"ON THE APPLICATION OF DIALYSIS IN DETERMINING THE NATURE OF THE CRYSTALLINE CONSTITUENTS OF PLANTS. BY J. ATTFIELD, PH.D., F.C.S., DIRECTOR OF THE LABORATORIES OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

"The author had dialysed a few plant juices, the first that came to hand, and from each had obtained some of the crystalline constituents. The tops of the common potato yielded a crop of nitrate of potash, some cubes of chloride of potassium, hexagonal crystal not analysed, sugar, and an ammonia salt. The deadly nightshade gave nitrate of potash, an unknown magnesia salt in square prisms, sugar, &c. Pea-pods yielded only sugar. The common garden lettuce contained nitrate of potash, tetrahedra of undetermined composition, sugar and ammonia. Cucumbers furnished sugar, ammonia, and sulphate of lime. The cabbage also furnished sulphate of lime and ammonia. Stramonium contained so much nitrate of potash, that dried portions quite deflagrated on being ignited.

"From these experiments the author thought the proposed application of dialysis promised to be of great service, directly and indirectly, in investigating vegetable physiology."

The President thought the paper a most important one, as the results seemed to afford much information respecting the manner in which acids and bases are combined in the living plant.

Mr. T. B. Groves inquired whether the author had detected any of the alkaloids.

Dr. Attfield said that minute portions of crystalline substances which could not be tested were seen, and these, possibly, were natural salts of the alkaloids. Much larger quantities of material would be required for their discrimination, and even then the relatively large amount of the colloid as compared with the alkaloid might make the complete isolation of the latter a doubtful problem.

Dr. Edwards had found the results of the application of dialysis to toxicology very unsatisfactory. If the process was continued for a length of time, portions of the colloid were diffused through the membrane, and vitiated the result.

* Mr. Brady's formula for this Glycerole of Tar or Tar Plasma was published some time ago in the *Pharmaceutical Journal*. As it may be new to many of our readers, we print it here:—Price's glycerine, 6 oz. weight; tar, 8 oz. weight; powdered starch, 2 drachms. Warm the glycerine, stir in the starch, add the tar, and raise the mixture rapidly to the boiling point. Strain through a cloth, if necessary, and stir while cooling. A dark brown mass, perfectly smooth, and somewhat softer than the Tar Ointment.

Mr. Brough observed that such a condition was inevitable, since there was no absolute line of demarcation between colloids and crystalloids.

At the request of a member Dr. Edwards briefly described the apparatus used in dialysis. He said the best and most simple form of dialyser was a hoop of gutta-percha, over which was stretched a piece of parchment paper, so as to form a sort of sieve. This sieve was then floated on a large quantity of distilled water, and the mixture to be dialysed was poured into it. After some hours the greater part of the crystalline matter would be found dissolved in the water, while the greater part of the non-crystallizable matter would remain in the dialyser. The dialysers and parchment paper were to be obtained at most of the gutta-percha shops as well as from the dealers in chemical apparatus.

"ON THE PURITY OF FOREIGN IODIDE OF POTASSIUM. BY MR. F. C. CLAYTON.

"The high price and large consumption of this article has made it one which the manufacturer has special temptations to adulterate. Of late years very large quantities of foreign make have found their way into our markets, giving rise to keen competition, which, in the case of drugs, is often far from improving their quality. From these considerations, we might still expect to find much that is impure, but the result detailed below lead us to a different conclusion. The impurities of iodide of potassium are bromide and chloride of potassium, and sulphate, iodate, and carbonate of potash. Moisture in excess is also to be considered an impurity, for besides giving the sample a greater liability to deliquesce, it shows an article of imperfect manufacture. The first mentioned adulterant, though it has at times been frequently used, has in none of the fifteen samples experimented upon been found, and the second only in quantities from 3.7 per cent. down to minute traces. Sulphate was never found in ponderable quantities, and iodate in only 3, all of which, however, were of foreign manufacture. (Several English samples were analysed for the sake of comparison.) In these three cases it never amounted to one per cent. Carbonate though more generally present never amounted to one per cent., generally much under this. From these results it will be seen that the iodide of potassium now in the market is practically pure, the percentage in all the samples being over ninety-five."

Mr. D. Hanbury did not think lime water a sufficiently delicate test for the presence of carbonate of potash. He believed that few of the samples would have been found free from this impurity had they been tested with sulphate of iron. Iodide of potassium had sometimes been prescribed in combination with sulphates of magnesia, soda, etc. In such cases it was most important that the iodide of potassium should be free from traces of carbonate of potash. The iodate was stated by medical men to be a most serious contamination, as a very small dose might produce unpleasant symptoms. The author had tested the iodide for bromide, but had found no trace of the latter. It would be well to reverse the investigation, and look for iodide in commercial bromide of potassium.

The President said it was most satisfactory to find that the fifteen samples of iodide of potassium were practically pure. He could not agree with Mr. Hanbury in condemning the Pharmacopœia test for carbonate of potash.

In reply to a question by Mr. Brady, the author of the paper stated that he had detected free iodine in one specimen.

"ON A TEST FOR METHYLIC ALCOHOL IN PRESENCE OF ETHYLIC ALCOHOL, WITH REMARKS ON METHYLATED SPIRIT. BY MR. JOHN TUCK.

"After referring to the value of methylated spirit, and the composition of wood naphtha, the author stated it to be his opinion, that wood naphtha once mixed with spirit of wine could not again be separated; and that though the characteristic odour of methylated spirit could be removed, yet the process required such cumbersome apparatus, that its use would certainly be followed by official detection. Seeing, however, that the illegal process might possibly be employed, and the revenue be thus defrauded, and the inodorous methylated spirit be used in pharmacy and in concocting liquors, he had searched for a test, whereby even the deodorized naphtha could be detected, when mixed with spirit of wine. Such a test he had found in an alkaline solution of the double

iodide of potassium and mercury. On boiling a few drops of this with pure spirit of wine, a yellowish-white precipitate was formed; but when methyl alcohol was present no such precipitate occurred. Details of the application of the test were then given. In testing flavoured spirits, tinctures, etc., it was desirable to distil the suspected liquid, and apply the test to the distillate."

The author said that when his paper was sent in he had not discovered the principle which prevented the formation of a precipitate by methylated spirit. Since then, however, he had found that acetone was the principle.

In illustration of his remarks Mr. Tuck applied the test to spirit of wine pure and methylated, and showed the action of acetone in preventing the formation of a precipitate.

Mr. T. B. Groves inquired whether volatile oils would have the same effect as acetone.

Mr. Tuck had not tried the experiment, but would be happy to do so in the meeting.

The experiment was performed with oil of cloves, and it was found that it had precisely the same influence as acetone.

Mr. Reynolds was of opinion that the test suggested by Mr. Tuck was essentially the same as the mercurial test proposed last year by Mr. Emerson Reynolds. The latter was now known to be useless in the presence of volatile oils, or of such derivatives of alcohol as are found in sweet spirit of nitre. A good test for detecting methylated spirit under its various disguises would be a great boon to all engaged in the practice of pharmacy.

Dr. Attfield reminded the meeting that the author of the paper had discovered a test for pure spirit of wine, which was really the object of his search.

The President thought the test a most valuable one, though it might not serve to distinguish wood naphtha from other substances which were sometimes mixed with spirit of wine. He hoped the author would continue his investigations with the view of discovering a test for methylated spirit that would be applicable to pharmaceutical preparations. He had examined a large number of tinctures which had been made with cleaned methylated spirit, and was sorry to say that many of the counterfeits might easily have been mistaken for honest preparations.

Dr. Parkinson believed that the public were not now so easily deceived by methylated medicines as formerly, and that they were beginning to appreciate the value of ethylic alcohol.

Mr. Pooley, Mr. Brady, and others warmly commended the paper, and urged the author to continue his experiments.

Mr. Tuck said he would take up the subject again, and communicate the results of his investigations to the next conference.

"REPORT ON THE WEIGHTS AND MEASURES USED IN PHARMACY. BY MR. BARNARD S. PROCTOR.

"The author first made a comparison of the apothecaries' weights of our own country with those of other civilised nations. Though there are forty different European pounds and as many ounces in general use, there were only two or three systems of pharmaceutical weights, and these not widely differing from each other. The English system, though good in the abstract, had no simple relation to the systems of other countries, nor to the other weights and measures of this country. Some of its own members were in an anomalous position. What was a fluid pound of apothecaries' weight? Was it 12 avoirdupois ounces, 12 troy ounces, or 16 avoirdupois ounces? A critical examination was then made of several suggested alterations in the weights and measures of pharmacy, those of Mr. Jacob Bell, Mr. Griffin, Dr. C. Wilson, and Mr. Warrington, being especially noticed. The advantages and disadvantages of the weights and measures authorized by the Medical Council in the new Pharmacopœia were next reviewed, and a suggestion made that the ounce of that system should be divided into drachms and scrupules. To get rid of the fractions of a grain, which would otherwise be appended to these drachms and scrupules, the author proposed that the value of the grain should be slightly increased; so that, instead of 18.229 grains being contained in one scruple, there should be only 18; instead of 54.687 in the drachm, there should be but 54; and 432 in the ounce, instead of, as now, 437.5. This was as near an approach to an amalgamation of the troy and apothecaries'

system as he could devise. The elaborate and ambitious system proposed by the American Pharmaceutical Association was next noticed, and then the French metrical system, the merits and demerits of all under various circumstances being carefully weighed. For ultimate general adoption the author thought the American octonary system to be superior to the metric decimal system; that, in short, doubling and halving a number was better than multiplying or dividing by ten. He concluded by proposing the use of the American system, modified to meet the requirements and customs of the English."

The reading of Mr. Proctor's able and comprehensive Report terminated the business of the day.

SECOND SITTING.

On Thursday, September 15, the members of the Conference assembled at half-past nine, and after transacting some general business, resumed the consideration of the Papers.

"ON THE APPLICATION OF MICROSCOPIC ANALYSIS TO PHARMACY. BY HENRY DEANE, F.L.S., AND H. B. BRADY, F.L.S.

"After a general *résumé* of the various uses to which the microscope had been applied in several departments of science connected with medicine and pharmacy, the authors proceeded to detail certain processes employed by them, which they considered belonged rather to the domain of pharmacy than to that either of chemistry or materia medica. The investigations which they comprised under this head, were especially those which had reference to the condition in which the active matter of a drug exists in its preparations. The present paper, which it would be impossible to give a fair idea of without some, at least, of the large number of drawings that were used as illustrations, was especially devoted to the details of a series of investigations connected with the various preparations of opium. The authors did not wish the paper to be considered in any other light than as the record of a preliminary investigation, and they proposed to continue the subject for a future meeting of the Conference."

Mr. King regarded the paper as one of great scientific value, as it shed quite a flood of light on the composition of the much used medicinal preparations of opium.

Mr. Stoddart exhibited a microscopic goniometer which he had employed for five years, and stated that the alkaloids could be more readily discriminated by measuring the angles of their crystals than by chemical means. Referring to the results obtained by the authors of the paper, he thought that the presence of the gum in solutions of opium might interfere with the formation of crystals.

The President said that he and Mr. Brady had found the gum to be essential to their experiments, as those solutions from which it had been removed gave no distinct crystals. He called attention to the great excess of codeia in Panna opium, as shown by one of the drawings, and thought that this drug might in many cases be advantageously substituted for Turkey opium. It would be seen that there were important differences between specimens of the same preparation obtained from different houses. All the samples of Batley's excellent preparation that had been examined gave uniform results. The black drop examined was a genuine specimen kindly furnished by Mr. Balkwill of Plymouth.

Dr. Attfield thought the paper had most important scientific and practical bearings. It was the first fruit of an investigation which seemed to promise much accurate knowledge respecting the condition in which the alkaloids exist in different kinds of opium; and if the results from the same sample were found to be constant, the author's process would afford a more ready means of valuation than any yet known.

Mr. Schacht asked whether the microscopic characters pointed out by the authors were sufficiently distinct to be conclusive.

The President said the results were all comparative and might be depended on. The microscopic characters of the residues obtained from different solutions could be easily distinguished.

Mr. D. Hanbury was astonished at the magnitude of the work which had been undertaken by the authors, and thought the results already obtained by them were of great practical value.

Mr. T. B. Groves suggested that the excess of codeia in Patna opium might come from the poppy capsule which was known to yield much codeia.

Mr. Pooley trusted that the drawings with which Mr. Brady had illustrated the paper would be engraved and published.

The President said he would take care that they should not be kept private.

Mr. Reynolds asked whether sulphate of lime and other mineral salts from the water used would be likely to mislead the observer.

The President thought not, as only half an ounce of each solution was required, and the quantity of mineral matter would be too minute to interfere with the results.

"ON THE PURITY OF SULPHATE OF QUININE OF COMMERCE.
BY MR. W. WALTER STODDART.

"The author's experiments showed that quinidine, and not cinchonine, must be generally sought for as the chief impurity in commercial sulphate of quinine. After pointing out the objections to the tests of Bouchardat and Pasteur, Stokes, Herapath, Brande and Pelletier, Mr. Stoddart proposed a modification of Liebig's, and gave the details of its application. A second trustworthy and ready test, for all possessing microscopes, was sulphocyanide of potassium. If a drop of a solution of the latter salt were added to a drop of a saturated and neutral solution of the suspected quinine, and the mixture observed by the microscope, crystals of sulphocyanide of quinidine and sulphocyanide of cinchonine, both of highly characteristic form, and wholly distinct from the sulphocyanide of quinine formed at the same time, would be observed if either quinidine or cinchonine were present. For quantitative determination the reporter employed De Vry's iodide of potassium reaction, and detailed the results of his analyses of samples of sulphate of quinine from Messrs. Howards and Sons, De Lisle and Co. (Pelletiers), Mr. J. Hulle, Messrs. Herring and Co., and a German specimen. It was, he said, gratifying to be able to affirm that sulphate of quinine, if purchased in bottles or sealed packets, as sent out by the makers, or obtained through well-known wholesale houses, is commercially pure and quite fit for medicinal use. It was the chemist's own fault if he were not supplied with an article of sufficient purity."

Mr. Brady said the importance of the Conference was proved by the additional light which Mr. Stoddart's Report had thrown upon the subject of the previous paper. In future investigations upon the microscopic appearances of pharmaceutical preparations, the President and himself would make use of the method of precipitating the alkaloids as sulphocyanides, instead of confining themselves to evaporation only.

Dr. Attfield said it was satisfactory to know that commercial quinine was practically pure. The paper was something more than a mere report, as it had called attention to a valuable qualitative test for alkaloids, and described an improved method of employing a quantitative test.

Mr. D. Hanbury said that all the specimens of quinine in the International Exhibition of 1862 had been analysed and found to be practically pure. This result might have been expected, as articles intended for exhibition would naturally be prepared with great care. The foreign makers did not generally send impure quinine to the English market; but some of them did not hesitate to export a very inferior article to South America and other parts. An excess of moisture was the only impurity he had detected in the quinine sold in England.

"ON COMMERCIAL PODOPHYLLIN. BY MR. JAMES SPEARING.

"After giving a short history of this drug, the author described the three processes usually followed in its preparation, and gave the results of an analytical examination of the product of each process. The method of the British Pharmacopœia was found to be the most economical and satisfactory of the three. He had examined twelve commercial specimens, and from the presence of alumina in five, inferred that they were prepared by the inefficient method of shaking the tincture with solution of alum; two contained iron, and one copper."

The President added that the author had sent him some podophyllin containing the mycelium of a peculiar fungus of

a silvery-white colour, and sufficiently large to be readily distinguished amongst the dark powder. He was disposed to think that it was similar to the mould which was often found on chamomile and coriander. He exhibited a drawing of this fungus by Mr. Brady.

Mr. T. B. Groves was sorry that no attempt had been made to separate podophyllin from berberine. Both principles were contained in the product of the Pharmacopœia process.

"A CHEMIST'S HOLIDAY—JOTTINGS IN FRANCE. BY D. HANBURY, F.L.S.

"This was a short paper, written in a familiar style, consisting of memoranda on pharmaceutical subjects made during a visit to the Alps of Dauphiny. The author having visited the monastery of the Grand Chartreuse, took occasion to call attention to the important service which pharmaceutical art had rendered to the institution, the large revenues of which, amounting to nearly £20,000 per annum, are at present chiefly derived from the sale of the elixir and cordials prepared by the monks. This was followed by some remarks upon the firs and pines of Dauphiny and the various species of turpentine derivable from them; an observation on the frequency of mistletoe on the Scotch fir; and an enumeration of the more interesting medicinal plants noticed in this part of France. The author then reminded his hearers of a curious kind of sugar called *Manna of Briançon*, which old authors have asserted is found upon the larches growing near that town, but which, from its rarity, has long fallen into oblivion. He remarked that the substance was, nevertheless, interesting, from the recent discovery of Berthelot, that it contains a peculiar kind of sugar. The author stated that he had examined the larches about Briançon in the year 1857, but without finding a trace of saccharine exudation. On the present occasion, however, he was more fortunate, for he succeeded, by the help of some peasants, in obtaining a good specimen of the larch manna. The specimen which was exhibited consisted of a dry, white substance, in small grains and tears, the largest of which scarce exceeded in length 1-3rd of an inch. The paper concluded with a few notes on the mineral productions of the country, and especially on the medicinal springs of Uriage."

The President said that the author had set a good example in making the best use of his eyes. The paper showed how much a knowledge of botany would enhance the pleasure of a chemist's holiday.

Mr. T. Harding wished to know whether the Conference would place itself in communication with the pharmaceutical bodies of the Continent.

The President could not recommend such an extension of the sphere of action.

In reply to Mr. T. B. Groves, the author stated that he was unable to say whether the manna found near Briançon had ever been observed on larches growing in England.

Some complimentary remarks by Mr. King concluded the conversation upon Mr. Hanbury's pleasant narrative.

"ON THE RANCIDITY OF FATS. BY T. B. GROVES, F.C.S.

"The author stated that the observation of the preservative effect of aromatic oils on oxide of mercury ointment had induced him to compare the relative efficacy of the various essential oils of commerce, both as regards mixed ointments and the pure fats.

"After general remarks on the process of rancidification, and the theories that have been imagined to account for it, he proceeded to consider the possibility of applying remedial measures of a radical character, which he decided in the negative. The experiments on variously-prepared specimens of lard, aromatised and non-aromatised, were then detailed, and the conclusion arrived at that creasote, oil of pimento, oil of cloves, and balsam of Peru, were capable of greatly retarding, if not of altogether preventing oxidation. A comparison of the effect of these aromata in preserving these aqueous solutions of albumen, gave countenance to the theory of the cause of rancidity of fats being the disturbance effected by a ferment of the albuminous order. He concluded by strongly urging the necessity of using for the preparation of ointments, especially those combining metallic oxides, materials retaining unaltered the odorous principles with which nature has endowed them, and suggested the advis-

ability of adding to lard and other inodorous fats small proportions of oil of pimento, to render them more permanent; to effect which, two drops to the ounce had been found sufficient."

The President said that the lard used in Pharmacy would not be so troublesome if a little more care was taken in preparing it. The leaf or flare should be cut up, and thoroughly washed with a large quantity of water before rendering the lard from it. The most effective way of washing the flare was to place the pieces on a sieve, and agitate the latter in a vessel of water.

Dr. Parkinson said that he had used the oil of benzoin to preserve ointments with great success.

Mr. Balkwill asked whether there was any way of preventing eod-liver oil from becoming rancid.

Mr. Robbins, in reply to this question, said that the oil did not become rancid when kept in sealed bottles. He had found samples that had been sealed up for two years perfectly sweet. The best way of preserving eod-liver, was to keep it in small bottles securely closed. Dr. Attfield had proved, some time ago, that the change of rancidity was accompanied by absorption of oxygen.

"ON THE PROCESSES FOR PREPARING SOME OF THE TINCTURES OF THE PHARMACOPOEIA. BY MR. W. D. SAVAGE.

"The author had experimented upon twelve different tinctures, making four specimens of each by four different processes. In all cases the four specimens were made from the same parcel of raw material, at the same temperature and with the same spirit. The first process was maceration for 21 days; the second, maceration for 7 days; the third, maceration for 48 hours, with subsequent percolation; the fourth, 21 days maceration, with the addition then of percolation. The relative value of these processes was ascertained by evaporating a similar portion of each tincture over a sandbath, and weighing the residue. The whole of the results were given in a tabular form. The author considered that maceration with subsequent percolation yielded the best results, and that the period of maceration should, as a rule, be not less than 14 days."

Dr. Attfield said he was not satisfied with the results given in this paper. An indirect method of estimating the strength of a tincture was inadmissible, as the quantity of active ingredient could not be readily determined, but the plan which the author had adopted was open to objection. The late Dr. Burton, in the course of a similar investigation, had taken the specific gravities of tinctures after macerations for different lengths of time, and had thus determined the exact time required for the complete exhaustion of each drug. The author of the paper had not attempted to find the point at which the menstruum ceased to act, but had simply compared the results of four fixed processes, by evaporating the tinctures and weighing the residues. For the evaporation he had employed the sand-bath; a very imperfect source of heat in comparative experiments. An oil-bath should have been used, as that would have supplied a fixed temperature.

Mr. D. Hanbury added, that in such experiments the residues ought to be dried until they ceased to lose weight.

Mr. Wade remarked that the author had said nothing about filtration.

The President said that the paper did not give sufficient details to enable the meeting to decide upon the value of the author's results. With a thermometer a sand-bath might be safely used for drying extractive matter.

Mr. Schacht objected to the assumption that the value of a tincture could be ascertained by weighing the extractive matter. Would any one assert that tincture of orange-peel containing much extractive was necessarily better than that which contained less? The best tea was made by using plenty of the leaf, and pouring off the infusion after a short digestion, and not by allowing it to stand until it became rich in extractive.

Mr. Robbins observed that nothing had been said about the agitation of the materials during maceration. This was an important omission, as Mr. Hills had shown that tinctures could be made, by the aid of frequent agitation, in so short a time as forty-eight hours.

Dr. Edwards explained the automatic displacement process lately introduced by Dr. Redwood. In this both maceration and percolation are ingeniously combined.

Mr. Balkwill remarked that the paper showed how necessary it was to adopt a uniform practice in the preparation of tinctures.

"ON THE CULTIVATION OF MEDICINAL PLANTS AT MITCHAM. BY MR. J. T. P. B. WARREN.

"The author gave a list of the plants cultivated, and the acreage they occupied. The yield of oil per acre varied with season and soil; lavender yielded 10 to 20 lbs. per acre, the second year's growth giving more than the first or third; peppermint 8 to 12 lbs., though much influenced by soil; 4 cwt. of chamomiles were obtained from an acre, and gave 8 lbs. of oil; and pennyroyal afforded about 12 lbs. of oil per acre. Mitcham produces annually 30,000 to 40,000 bushels of roses, and about 11 tons of chamomile flowers. The details of extraction of essential oils were then given, and some remarks made on the rotation of medico-agricultural crops."

Mr. D. Hanbury offered some remarks upon the volatile oil of chamomile flowers, and gave his reasons for suspecting that the growers occasionally distilled the whole plant.

"ON THE PREPARATION OF SMALL QUANTITIES OF CONCENTRATED INFUSIONS. BY MR. T. GRUNDY.

"The finely comminuted materials are infused in the requisite quantity of boiling water, and the mixture then percolated in a little jacketed tin percolator, kept hot by a current of steam from a small tin boiler. The first portion of the product is set aside, and the second and third reduced in bulk by evaporation. The three are then mixed, and spirit added, in the proportion of three to seventeen. Two or three of the infusions require special preparation; linseed cannot be so treated, and infusions requiring temperatures between those of cold and boiling water require the aid of a thermometer."

The President said the process described appeared to be ingenious, but he deprecated the use of concentrated infusions by dispensers of medicines. The temptation to substitute them for the legitimate preparations of the Pharmacopœia might be very great, but it ought to be resisted. Patients could often distinguish them, and on comparing the medicines containing them with those made up in the proper manner would be sure to prefer the latter. He had found that the cost of making a pint a day of all the infusions of the Pharmacopœia did not exceed £14 or £15 a year.

"ON POTENTILLA TORMENTILLA. BY MR. JOHN ADAMS, LOUGHBOROUGH.

"The author gave a short history of the plant, and drew attention to its peculiar value as a *non*-stimulating astringent and febrifuge. In the event of its being again introduced into the Pharmacopœia he proposed formulæ for a tincture and infusion, and exhibited a specimen of the former to the meeting."

Dr. Parkinson said that in the north of England the root was in common use as an astringent remedy for cattle.

THIRD SITTING.

On Friday, September 16, the Conference opened at half-past nine. The room was well filled, the business appointed for the day being of a very attractive character. The table was covered with specimens of safety bottles and poison labels.

Mr. J. Raymond King opened the proceedings by reading the following able report of the Bath Committee:—

REPORT OF THE COMMITTEE APPOINTED BY THE CONFERENCE TO CONSIDER THE SUBJECT OF THE PREVENTION OF ACCIDENTAL POISONING.

"The prevention of accidental poisoning, or of accident in any shape, connected with the very responsible duties of a chemist, cannot fail of itself to be a matter of the deepest interest, and we do not wonder that the subject should have engaged the thoughtful attention of so many of our brethren throughout the kingdom.

Hitherto, no satisfactory conclusions appear to have been arrived at, but the investigations of your Committee show

that the subject is worthy the consideration of every one who values human life, and would desire to put an end to the recurrence of those sad domestic tragedies from "accidental poisoning."

On the present interesting occasion, when so many of our brethren are assembled to meet and welcome to our city the noble and scientific institution, the British Association, we think there cannot be a more befitting moment to discuss the grave and all important matter which is this morning to engage our attention.

From the wide range of subjects that come within our notice, and the mental and moral diversities of character with which we have to deal, we cannot expect uniformity of action, yet we would fain hope that from the long and continuous attention we have devoted to this matter, that some plans and suggestions made through your Committee may be found available to prevent the catastrophes of which we so often hear.

Your Committee have thought it well that their deductions and remarks should be based upon facts; they have therefore, as briefly as possible, drawn out the leading circumstances of all the cases of accidental poisoning recorded in the *Pharmaceutical Journal* for the last two years, viz. from July, 1862, to June, 1864, inclusive. They are twenty-five in number, and occur in the following order:—

No. 1.—A tradesman being ill sent for his medical adviser, and received from him two bottles, one containing embrocation for external application, the other a draught to be taken internally. On the following morning the embrocation was given, under the erroneous impression that it was the draught.

On examination, the housekeeper said no label was on the embrocation, neither did any one apprise her it was poison. The medical man acknowledged that the bottle was not labelled "poison," but submitted that it bore a label intimating that it was for external use only.

No. 2.—Accidental Poisoning by Arsenic.—In this case it is recorded that Mrs. C—, after assisting her son in the preparation of a sheep-dipping composition of arsenic and soap, made a pudding for the dinner of her family and servants, and that by some means not ascertained, some of the arsenic became mixed with the pudding. One man died; the rest of those who partook of the pudding recovered.

No. 3.—Accidental Poisoning by Sulphate of Zinc.—A man, aged 52, took by mistake a wineglassful of a concentrated solution of sulphate of zinc, recommended to him by a veterinary surgeon for a lotion for a horse. Result fatal.

No. 4.—Accidental Poisoning by Oxalic Acid.—A man, aged 58, died from the effects of oxalic acid taken in mistake for Epsom salts. The wife of the deceased went to a chemist's shop for some salts and senna. On opening the packets she found both to be apparently the same; she took them back, but found the shop closed. On her return she dissolved the smaller packet of crystals in water, and handed the solution to her husband, who drank it, and died in consequence.

The packet was boldly labelled "Oxalic Acid, Poison," but it appeared the woman could not read.

No. 5.—In this case, a solution of strychnia appears to have been dispensed by a surgeon or his assistant, in mistake for solution of emetic tartar. The bottles containing the two solutions were standing at no great distance from each other, but were unlike in almost every respect, except, that they were both labelled "Poison," and both contained colourless fluids. All the ordinary precautions to prevent accident had been taken.

No. 6.—Accidental Poisoning by Extract of Aconite.—This was a clear case of error in dispensing by a chemist's assistant; extract of aconite was put into pills in mistake for extract of wormwood, with a fatal result.

No. 7.—In this instance, a druggist sold croton oil for syrup of squills, with a fatal result. No particulars given.

No. 8.—A father gave to his child, two years of age, a teaspoonful of camphorated oil, in mistake for a mixture, "without looking at the label." The child died.

No. 9.—In this instance a wife administered to her husband oxalic acid in mistake for Epsom salts. Result fatal.

No. 10.—This is an instance of tartar emetic being sold for cream of tartar, by a wholesale house. Several persons were made ill by it, but no fatal case occurred.

No. 11.—A boy, nine years of age, obtained access to a bottle of almond flavour, sold by a druggist to his mother for

confectionery; the boy took, as he said, "just a taste," and died the following morning. The bottle was not labelled "Poison," nor was the woman even told it was poison.

No. 12.—In this case cream of tartar mixed with arsenic was sold to several persons by a druggist, but no fatal case occurred.

No. 13.—This is a sad case of laudanum being sold by a druggist in mistake for black draught. The victim was a lady twenty-eight years of age, a healthy woman. Her maid procured for her from a druggist a pill and a draught. It appeared that the druggist's shop was being papered and painted, and was in a confused state; through this circumstance the draught phial was filled with laudanum in mistake, by the druggist himself.

No. 14.—This was an instance of Burnett's fluid, administered by mistake for fluid magnesia, with a fatal result.

No. 15.—A second fatal case from the same cause.

No. 16.—A solution of morphia was sent to a lady, for her own use, with directions how to take it, but it was not labelled "Poison." The nurse carelessly administered a portion to the infant, in mistake for dill water, with a fatal result.

No. 17 is a case of accidental poisoning by chloroformic anodyne. The record simply states that the patient had given to her by mistake six drachms of the anodyne. The result was fatal.

No. 18 is a case of laudanum being sold by a druggist himself in mistake for tincture of rhubarb, with a fatal result.

No. 19 is a second case of the same, also with a fatal result. No attempt to account for, or excuse the carelessness.

No. 20.—This is an instance of a man being poisoned fatally by taking saltpetre instead of Epsom salts, sold to him by a druggist in mistake.

No. 21.—This is the third recorded case in two years, in which laudanum has been sold by a druggist in mistake for tincture of rhubarb, with a fatal result.

No. 22.—In this case two lads, aged fourteen and sixteen, were fatally poisoned by sheep-dipping powder containing arsenic. It was folded in brown paper, not labelled, and was mistaken for sulphur.

No. 23.—This case demonstrates the necessity of a legal restriction to prevent unqualified persons from dealing in poisons. A grocer's wife, in the absence of her husband, supplied an applicant with five grains of strychnia, in mistake for calomel. The poor victim, a young woman twenty-seven years of age, expired in great agony in less than fifteen minutes after taking it.

No. 24.—In the same month we have recorded a second case of poisoning by strychnia, and as if to teach us humility, in this instance the mistake was made by a well-educated and experienced chemist's assistant in an old and well-regulated establishment. One witness said, he considered the arrangements of the establishment to be exceedingly good, and he knew that elaborate pains were taken to have the prescriptions checked; but it was proved that the strychnia had been kept in a state of powder for the convenience of dispensing, and not in its crystalline form; and that the bottle containing the powdered strychnia was kept on the same shelf as the James's powder, for which it had been mistaken, and was separated from it by only one bottle. The strychnia bottle was labelled "Poison." The jury have since pronounced the assistant "not guilty," when tried for manslaughter.

No. 25.—In our last case a surgeon's assistant was making solution of morphia, he turned it into a measure, from which he began to filter it into a bottle; he retired from the surgery for a few minutes, during which time the surgeon came in, made up a mixture, and thinking it water in the measure, used it as such, with a fatal result.

Such are the simple facts of the twenty-five cases before us, and it would not be difficult to engage your attention for some time, in commenting upon them; but we doubt not you have felt as we have upon each case as it was brought before you, and are disposed rather to gather from them the lessons of wisdom and charity they are designed to teach, than to indulge in harsh criticism upon those who have already suffered so severely from the consequences of their error.

Your Committee, however, think it will only be doing our brethren justice to show that less than half of these cases can be laid at the doors of a legitimate chemist and druggist, by classifying them as follows:—

There are 10 cases in which the mistake was committed by the administrator: 2 cases by a surgeon, 1 by a wholesale house, 1 by a grocer's wife, 11 by retail chemists or their assistants.

Your Committee have had correspondence with various chemists of standing in several parts of the kingdom, and it is now their pleasing duty to mention the various suggestions that have been brought under their notice. They are classed under the three heads of Shop Arrangements, Dispensing, Sale of Poisons.

SHOP ARRANGEMENTS.

It has been suggested by one friend that all poisons should be kept in a separate room.

By several others, that they should be kept in a poison-cupboard, having a lock and key.

By another, that poisonous liquids in the shop and dispensing department should be kept in opaque white glass bottles, as a contrast to the dark-coloured tinctures on our shelves.

By another, that all poisons, liquids or solids, should be kept in bottles registered by our fellow-citizen Mr. Merrikin, and called "Merrikin's caution bottle." They are covered with pointed excrescences (except where labelled), reminding by the sense of touch that poison is being dealt with.

Again, it has been suggested that on every bottle containing poison in our shops or dispensing departments, the maximum dose of the contents should be distinctly marked on the bottle.

Another, that shop bottles containing poison should be labelled in Old English, in contrast to the Roman characters in common use.

Another, that the labels on bottles containing poison in our shops or dispensing departments should be so placed or shaped that the whole of the label can be seen at a glance, instead of curling round the bottle in the usual way.

One more suggestion has been made under this head, as an amendment to the last, viz., that *all* shop or store bottles should be labelled in the way last described, but having the name of the base of the preparation at the top, and in larger type than the portion describing the nature of the preparation, which should be placed under it, as in the specimen on the table.

We have next to give you the various suggestions that have been made, coming under the head of—

DISPENSING.

In this department your Committee feel there is cause for the most anxious deliberation. They gladly acknowledge the great care and attention bestowed by their brethren generally upon the arrangements of the dispensing department, and feel that they have little of a novel character to bring before them; but it is their duty to present the following suggestions,—premising first, that in all instances a distinct department should be set aside for dispensing, and, as far as practicable, it should be such as will exclude senseless gossips or others who may cause to the dispenser abstraction of mind.

Under the head of "Dispensing" we have the following suggestions. The principles of some of them are, no doubt, generally adopted.

It has been suggested that wherever practicable it should be an invariable rule, that every prescription be checked by a second person before it is sent out, and that the weighing or measuring dangerous poisons be witnessed by him.

Also that liniments, lotions, and poisonous preparations of all kinds, should invariably be dispensed in bottles of a peculiar shape or construction. The following have been mentioned as suitable:—

Bottles similar in shape to soda-water bottles, that will not stand.

That mixtures be dispensed in ovals, and poisonous liquids in perfect squares.

That all medicines for external application be dispensed in blue bottles, with yellow labels for directions and red-printed "Poison" labels.

That labels on bottles of medicine to be taken internally be printed in black, but for external use in red ink.

That all poisonous liquids be dispensed in Savory's well-known poison bottles with narrow necks, so that only drops

or a very small stream will issue at a time, intending to remind the dispenser or administrator that he is dealing with something strong.

Then we have the York Glass Company's ingenious modification of Savory's bottle, and Gilbertson's wedge-shaped poison bottle, that will not stand on end.

Also Bird's poison corks, attached to a star-shaped wooden head or cap, the sense of touch being thus appealed to.

Then we have Thonger's rough labels, with the same intent, and Thompson's capped bottles with a lock and key.

One eminent firm has adopted the plan of keeping all dangerous things, as tinct. opii, liquor morphiae, morphine, strychnine, &c., in tin cases, without covers, as tall as the tops of the stoppers, and so large that the bottles must be taken out to be used.

There is also on the table a specimen of a metal band for poison bottles, invented by Mr. Batchelor, of Farcham.

Lastly, Merrikin's caution bottle, for dispensing, similar in its principle to his caution bottle for the shop, but differing in form, the principle of both being that of appealing to the sense of touch, and being permanent, effective, and unmis-takeable, which cannot be said of others.

Our third division of suggestions comes under the head of—

SALE OF POISONS.

It has been suggested on this subject that certain peculiarly dangerous poisons, such as strychnia, morphia, prussic acid, &c., should not be sold in an unmixed state without a medical order, under any circumstances whatever.

That poisons such as laudanum, oxalic acid, and others in common use, should, as far as practicable, be sold only to persons of mature age, and personally known to the vender.

That no poison be sold in dangerous quantity by any assistant or apprentice without the express sanction of the principal.

That dry poisons, such as oxalic acid, sugar of lead, red and white precipitates, &c. &c., be invariably folded in black paper, having the usual label with the name of the article, and in addition a label with the word "Poison" in bold white letters on a black ground carefully attached.

This concludes the suggestions which have been made to your Committee. Many of them meet with their most cordial approval, and will be recommended by them as worthy of universal adoption.

Your Committee have now to lay before you the practical deductions which they have drawn from the consideration of the facts and suggestions brought under their notice.

The first is, that there are seventeen of the twenty-five cases of accidental poisoning, in which there is every reason to believe that a thoroughly effective poison bottle would have prevented the accident.

Next, that there are at least *three* cases in which, had the poison sold been wrapped in paper of distinctive character, and labelled as suggested, there is reason to believe that the accident would not have occurred.

Thus we have the encouraging assurance that at least 80 per cent. of the usual cases of accidental poisoning may hereafter be prevented by the use of such means.

Your Committee, therefore, beg to express their obligation to those brethren who have assisted them by their counsel and suggestions, which if not very numerous have been very practical, and have enabled your Committee to hope that their labours will not have been in vain. They trust that the following recommendations will meet with the approval of all who are in earnest in seeking to avoid the terrible consequences of error in their most responsible duties:—

Your Committee are happy to be able to observe, that only one of the twenty-five cases of accidental poisoning occurred apparently through *ignorance*, and that in a case calling loudly for legislative interference, to restrict the sale of poisons to educated persons; but although this case was not that of a chemist or his assistant, we dare not assume that *only grocers' wives* need to be more highly educated than they are. Your Committee therefore beg respectfully to commend to every one engaged in the practice of pharmacy, the present facilities for acquiring a good theoretical as well as practical knowledge of their business, feeling assured that such knowledge is the best foundation for future safety and usefulness in their calling.

They next remind their brethren that they consider it indispensable to safety, that a separate and suitable part of their shop or premises should be set apart for dispensing prescriptions, wherever this has not already been done.

Also, that in the dispensing department or other suitable place, there be a *repertorium toxicorum*, or *poison cupboard*, under lock and key, in which should be kept all the concentrated and virulent poisons, or a small bottle of each sufficient for present use, the bottles being filled from store bottles in another and larger store cupboard or room, as required.

They also recommend, that the labels upon all shop and store bottles be in future so placed or shaped that the whole of the label can be seen at a glance, instead of curling round the bottles in the usual way; and

That the new series of Latin labels introduced by Messrs. Ford and Shapland be taken as examples of the plan of labelling shop bottles recommended by your Committee.

Your Committee approve the suggestion that, wherever practicable, every prescription be checked by a second person before it is sent out.

They also strongly recommend that liniments, lotions, and poisonous preparations of all kinds, be invariably dispensed in the caution bottles before adverted to, and with labels printed in red ink.

In the retailing of poisons, your Committee recommend very cordially the suggestion that the more concentrated and potent poisons, such as strychnia, morphia, prussic acid, &c., should not be sold in an unmixed state, without a medical order, under any circumstances whatever.

Also, that no poison be sold in a dangerous quantity by any assistant or apprentice, without the express sanction of the principal.

Again, that every specially dangerous substance, in addition to its name, be distinctly labelled "Poison," in white letters on a black ground, before it is sent out, excepting medicines dispensed from a prescription where the dose or use of it may be considered sufficient.

Lastly, your Committee strongly recommend that dry poisons, such as oxalic acid, sugar of lead, red and white precipitate, &c., be invariably folded in paper of a distinctive character; and, in addition to the name of the article, that a label with the word "Poison," in bold white letters on a black ground, be carefully attached to each packet.

Your Committee, however, cannot conclude their report without expressing their firm conviction, that no amount of ingenious contrivance, or of education, will avail to prevent repetitions of the sad occurrences that have been brought before us, without the cultivation of a steady, thoughtful, anxious yet composed mind, bent on business when in business, and alive to the dangers and responsibilities incident to the retailing and dispensing of medicines.

Your Committee have devoted much and earnest deliberation to the subject entrusted to them; they have endeavoured to trace the principal causes of accident, and they are bound to confess that in many instances they can only ascribe them to gross and culpable neglect.

They therefore beg to urge upon their brethren the necessity on their part of a careful surveillance by responsible parties; a thorough revision of their mode of conducting business, in all its details; and the discouragement of long and late hours of business, so detrimental to the energies of mind and body of their assistants and apprentices; for, however conscientious they may be in the discharge of duty, we must remember that they lack the wholesome stimulus to continuous exertion which we enjoy in a consciousness of proprietorship.

The successful management of a business so nearly allied to a profession must place a man in a position higher than the mere retailer of goods, for it demands a higher cultivation of the mind, and is therefore deserving of a higher rate of remuneration; and this will be gained in the respect and confidence of his customers, who are often pleased to treat their chemist as a confidential friend.

Let it, then, be our ambition to aim at perfection in our legitimate business; there is in it abundant scope for the exercise of all our powers, and without this we shall never rightly fulfil our duties, or meet the requirements of an exacting and discerning public.

Your Committee have yet to perform a simple act of justice, by tendering their acknowledgments to our esteemed secretary, Mr. Pooley, for his assistance and encouragement

in completing a report, which they trust will not be without some practical results.

(Signed) J. RAYMOND KING.
J. H. MARSH.
F. W. KENT.
JOHN B. MERRIKIN.

The President said that the admirable report which had just been read related to a subject of vital importance to all chemists and druggists. Legislation upon the sale of poisons was inevitable. The chief organs of public opinion had recommended it, and there could be no doubt that there was a wide spread feeling in favour of the introduction of some stringent Poison Bill into Parliament. It was to be hoped, however, that the chemists would be consulted before any Bill was drawn up, as they alone could point out the difficulties connected with the subject. A report by Dr. Taylor "On the Dangers Arising to Public Health in the Conditions under which Drugs and Poisons are Retailled," had been included in the recently-published report of the Medical Officer of the Privy Council. He thought that some of Dr. Taylor's statements and conclusions ought to be brought before the Conference, and he would, therefore, ask the Secretary to read some extracts from the report.

The more important passages of the report were then read. In reference to Dr. Taylor's suggestion that the sale of certain specified articles should be restricted to Pharmaceutical Chemists and Licentiates of the Apothecaries' Company, the President begged to assure the Conference that the Council of the Pharmaceutical Society would not support or approve of exclusive privileges being conferred upon pharmaceutical chemists to the exclusion of other competent dealers in drugs.

The next point referred to by the President was the sale of poisons in small villages that could not support regular chemists and druggists. It was generally admitted that the sale of poisonous drugs by grocers ought to be checked, but it was clear that poisons must be sold in villages. It had occurred to him that the difficulty might be got over by allowing the general dealer of the village to sell some of the potent remedies in sealed bottles and packets, supplied by recognized wholesale houses, whose labels they should bear. It was not easy to separate poisonous from non-poisonous substances, for even roast-beef might be regarded as poisonous in excessive doses, but he must say that it was quite feasible to form a schedule of the poisons which had most frequently led to accidents. The system of checking prescriptions by a second person was an admirable one; but, of course, could only be adopted in large establishments. He approved of the plan of keeping the dispensing department distinct from the retail, as the gossip of customers diverted the attention from the prescriptions. The simple precaution of separating the more poisonous drugs from the rest ought to be generally taken. The plan of tying over the stoppers of bottles containing powerful remedies was one he had adopted for years, and could strongly recommend. He thought the use of conspicuous bottles for potent remedies was open to objection. It was not advisable to let customers think that their medicines contained dangerous drugs. Mr. Merrikin's caution bottle was an admirable one, and would not be so conspicuous when on the shelf as a bottle of a different shape or colour would be. The practice of diluting such remedies as syrup of poppies for retail sale, in order to diminish the risk of accident, was really a very dangerous one, for when the proper article came to be supplied a poisonous dose would probably be used. The President concluded his excellent commentary on the report, by pointing out the bad effects of late business hours, and warmly advocating the interests of assistants and apprentices.

Mr. Pooley remarked that the recommendations of the Committee were not intended to apply to all cases, and their adoption would necessarily be governed by circumstances.

Mr. Tylee believed that the public liked to see peculiar poison bottles among the ordinary bottles on the shelves, and had great confidence in the dispenser who had taken such precautions against accident.

Mr. Abraham said he felt much indebted to the President for the kind remarks in his opening address upon a recent painful occurrence which had seriously affected himself and his partner. He hoped the meeting would permit him to explain the circumstances of the case, as the reports which

had appeared in the columns of the press were calculated to produce a wrong impression. He would in the first place call attention to the fact, that the state of things to which the accident was generally ascribed had never been publicly discussed. In the trial of Mr. Poole, the assistant, on the charge of manslaughter, the defence was virtually a condemnation of the system adopted by his principals. The position of the strychnia bottle was the great point of the case. It was one of fourteen dark-blue opaque bottles which were kept on a shelf by themselves. They all contained uncommon articles, strychnia being the one most frequently used. Upon the strychnia bottle was a very conspicuous poison label. The practice of the establishment had been to keep the strychnia in crystals, but an order for an ounce of the powder had induced an assistant to pulverize the whole, but he (Mr. Abraham) knew nothing of this until after the accident. If the powder had been in a transparent bottle, its appearance might have deceived the dispenser; but the bottle being opaque, the change from crystals to powder could not have occasioned the mistake. When the trial of the action for damages came on, the firm were prepared with a large amount of evidence as to the precautions adopted by various leading houses, and by themselves. They were advised, however, by counsel that, even supposing they should prove that their arrangements were the best that could be devised, that would be no defence, and the amount of damages would be the only question for the jury. Under those circumstances the firm felt that an arrangement was desirable, being anxious to make what reparation they could for their supposed share in the melancholy occurrence. He and his partner had been greatly comforted by the kind expressions of sympathy received from their professional brethren. The number of the CHEMIST AND DRUGGIST which had just appeared contained a letter suggesting that a subscription should be raised for the purpose of reimbursing them, and actually giving the names of several subscribers. He was gratified by this kind offer, but on the part of Mr. Clay and himself he must respectfully decline it. With regard to the suggestions of the Committee, he was a strong advocate for removing the dispensing department to a part of the shop where customers could not distract the attention of the dispenser by conversation. The plan of checking all compounded medicines by a senior assistant was very important, and their method was for this person to receive the prescription from the customer, see to its being copied, place it and the necessary written label or labels in an envelope, and hand over to the dispenser. This plan answered well, and in his large experience he had never known a wrong label affixed, as it was ready written before the bottle, &c., was filled. The bottle was corked, but not tied over, and returned to the senior assistant to examine and wrap up. As a substitute for a "poison cupboard," under some circumstances, he had put a bar across a shelf of perhaps twenty bottles, and secured it by a lock. For liniments, he used the green "active" round phials, made by the York Glass Company, with a distinct rough label bearing the word "Poison." He trusted that the Conference would state clearly what precautions should be adopted, so that, in the event of any accident, those chemists who had employed them might be exonerated from the charge of carelessness.

Mr. Balkwill considered that the carelessness of chemists had been grossly exaggerated, and that the proportion of accidents occurring from poisons was small as compared with other causes of violent death. All knew how frequently medical men made serious blunders in writing prescriptions, the consequences of which were averted by the vigilance of the dispensing chemist. He had himself received a prescription in which tincture of aconite had been written by mistake for tincture of arnica. He had supplied the medicine, but had taken the precaution of covering the bottle with poison labels. When, however, unqualified dispensers, as errand boys, &c., were employed by general practitioners, we could not doubt that similar errors in prescribing occurred, but that they were not rendered harmless as in our own case. He approved of most of the suggestions of the Committee.

The President agreed with the last speaker in thinking that there were no grounds for complaint against the body of chemists and druggists.

Mr. Schacht commended the system of checking, and had long adopted it. It was not only to prevent serious accident that it was important, but as an efficient remedy against

those vexations but trifling errors which altered the sensible quality of a medicine, and destroyed the confidence of the patient. He could not avoid expressing his regret that Messrs. Clay and Abraham should have compromised the late action against them, instead of defending it, and at the same time the rights of the trade, before a jury.

The suggestions of the Committee were then considered *serialim*. In a discussion upon a separate dispensing department,—

Mr. T. B. Groves objected that, being out of sight, it would be allowed to be untidy, and Mr. Leay feared that it would often be dark, if far from the window.

Mr. Pooley denied that there were any sufficient reasons why such a place should be untidy.

Mr. Daniel Bell Hanbury said that some establishments were so situated that the addition of a dispensing department was not practicable, which was the case in that with which he was connected.

The President related the experience of another leading house in London, where the experiment of putting up a screen was tried more than thirty years since, but the old plan of using the counter indiscriminately for dispensing and retail had been returned to.

Other members quoted the practice of Apothecaries' Hall and leading dispensing houses in favour of the separate system.

Mr. D. Hanbury spoke in favour of a "poison cupboard," which was an arrangement existing at Plough Court, with the additional precaution that some of the more potent drugs were not allowed to be taken out without a witness. He referred to the regulations which were enforced in Belgium. There were a number of poisonous substances named which had to be kept under lock and key, and a number which had to be kept separate, but not locked up.

Mr. T. Harding thought that a classified list like that described by Mr. Hanbury would be very useful to chemists and druggists.

Mr. Merrikin called especial attention to the suggestion that the whole of the label should be visible upon the front of the shop bottle. The Committee had been influenced by the knowledge of a case where Liq. Ammonia was dispensed instead of Liq. Ammon. Acet., and death resulted.

Mr. Wade suggested that a useful precaution consisted in placing the ordinary-shaped label in a perpendicular position; thus, Vin. Colchici might be so labelled when standing, as it too frequently did, between Vin. Antimonialis and Vin. Ipecacuanhae.

Mr. Pooley expressed approval of a label introduced by Messrs. Ford and Shapland, in which the name of the drug, as "RHEUM," was given in large letters, and the preparation, as "Tinct." or "Syrup," was placed beneath it. Abbreviations were a fertile source of error, and they were avoided very much by this plan.

Mr. T. B. Groves suggested that the label might be repeated, so that the essential name would be seen from either side; thus—

TR. OPIL.
OPIL TR.

Some members said that this appeared likely to create error.

Mr. Merrikin queried whether the shop bottles used in compounding a prescription might not be left upon the counter until it was finished, and then be reviewed by the dispenser.

The general expression, was, however, opposed to this plan.

The President called attention to the importance that the contents of shop bottles should be checked before they were used. In his establishment, a junior assistant filled the bottles that required it each morning, entered them in a book, and this entry was signed by a senior assistant after having examined the correctness of the filling.

Mr. D. B. Hanbury and Mr. Abraham spoke to using a somewhat similar system.

In the discussion upon bottles and labels, Mr. Matthews urged that any special bottle would be liable to be put to other purposes, especially amongst the poor, and hence the value of the precaution would be lost.

Mr. T. Harding thought that the possible application of poison bottles to improper purposes was a matter that need not trouble the chemist. All he had to see to was that the poisons he dispensed were properly distinguished.

Mr. T. B. Groves thought that some of these precautions were mischievous, especially those which appealed to the sense of touch, instead of requiring that a patient should use more caution in other respects.

In reply to this, it was shown that nearly every establishment adopted some precaution or other in dispensing medicines for external use, but what was wanted was some uniformity of practice in this respect.

Mr. Schacht was anxious to avoid any method which would compel a duplicate set of bottles being kept for liniments, &c. He had been in the habit of covering an ordinary bottle with blue paper when dispensing preparations for external use. The paper being rough, appealed to the sense of touch as well as to that of sight.

Mr. Reynolds thought that a slight modification of Mr. Schacht's plan would meet most of the difficulties of the case; thus, a ribbon of rough and coloured paper placed spirally round a bottle of any shape would answer the same purpose, and, he thought, present many advantages. It would permit the appearance and quantity of the contents to be seen, would catch the eye in any position, and appeal to the sense of touch equally, whilst it could be applied to any bottle, and be removed easily if required. It might be applied in a moment.

The President, Mr. Abraham, Mr. Merrikin, Mr. Wade, and others, approved of Mr. Schacht's plan of a covering of paper round the bottle as a safeguard.

Mr. Robbins thought that a label printed in red ink, upon the York Glass Company's special bottle, was a good protection against mistake.

The President recommended the meeting to bear in mind the reason given by the late Jacob Bell to Lord Wensleydale for objecting to some of the Poison Bills that had been introduced, viz., that "we did not wish to have a weak fence round a pond that was dangerous." The result of the discussion of the Report was, that the meeting agreed to a series of suggestions, which were ordered to be printed, and a copy placed in the hands of every member before the next sitting.

A communication was read from Mr. W. J. Halliday, of Manchester, in relation to prosecutions directed against chemists for the consequences of errors made by them or their assistants, and suggesting that a fund should be established, under suitable management, to defray the expenses of such legal actions.

The whole of the opinions expressed in the meeting were to the effect that the objections to taking such a course were an insuperable obstacle, and that it could not be adopted.

FOURTH SITTING.

This was held on Monday, September 19, and commenced at half-past nine.

The following suggestions arising out of the discussion at the previous sitting, were accepted by the Conference:—

"SUGGESTIONS CONCERNING ACCIDENTAL POISONING.

"The Members of the British Pharmaceutical Conference have had under deliberation the subject of the prevention of accidental poisoning. The result has been to convince them that most qualified dispensers of medicine already adopt precautions to this end, and they consider that the comparative rareness of mistakes shows that such safeguards are generally attended with success. It being desirable however that some approach to uniformity of practice should exist, the following suggestions are offered:—

"1. It is recommended that all who are, or expect to be, engaged in the practice of pharmacy, should take advantage of existing facilities for acquiring a good theoretical as well as practical knowledge of their business, as being the best foundation that can be laid for future safety, as well as usefulness, in their calling.

"2. "It is desirable that, where practicable, a separate and suitable part of the shop of a chemist and druggist should be set apart for the dispensing of prescriptions.

"3. In the dispensing department, or other suitable place, there should be a *repertorium toxicorum*, or 'poison cupboard,' under lock and key, in which should be kept all the concentrated and virulent poisons. An additional protection of similar character consists in securing the stopper of a bottle by tying over or other means.

"4. It is advantageous that labels on shop bottles should

be visible at a glance; the words being for instance, in two short lines, on a square label, rather than in one line on a long curved label.

"5. Where practicable, every prescription should be checked by a second person before it leaves the shop.

"6. It is expedient that liniments, lotions, and poisonous preparations for external use, should be sent out in such a form as to be easily distinguished, by touch as well as sight, from medicines intended for internal administration.

"7. Every specially dangerous substance sold by the chemist and druggist, should, in addition to its name, be distinctly labelled 'Poison;' except in the case of medicines dispensed from a prescription, where the statement of the use or dose may be considered to be sufficient precaution. A label having the word 'Poison' in white letters on a black ground is well adapted for the above purpose."

Dr. Attfield, in rising to move the reception of the Report, alluded to the care with which facts had been collated, the practical value of the conclusions, the explicit manner in which it had been drawn up, and the important series of suggestions it had elicited. He proposed "That the Report of the Committee appointed by the Conference to consider the means best calculated to prevent the recurrence of accidental poisoning be received, and that the best thanks of the meeting be accorded to the reporters, Messrs. King, Marsh, Kent, and Merrikin."

Mr. Matthews seconded the resolution which was carried unanimously.

"ON COMMERCIAL PHOSPHORIC ACID. BY R. PARKINSON, PH. D.

"Twenty-eight samples had been examined with reference to their strength and freedom from impurity, the result as to strength being that three samples came up to the British Pharmacopœia strength; five more were about the London Pharmacopœia strength; while the remainder were of various shades of declension. Phosphate of ammonia was present in six samples; sulphuric acid in one; nitric acid, traces only in any. The presence of ammonia was considered evidence that the samples containing it had been made from the glacial acid, which, commercially, was made by heating the phosphate of ammonia; the whole of the ammonia never being practically got rid of. One sample of German glacial contained 5 per cent. of ammonia, which was equal to 17½ per cent. of tribasic phosphate of ammonia. If a pure glacial acid could be readily obtained, commercially, that was suggested as the best source of the dilute acid. The combustion of phosphorus, with arrangements for the supply of air and collection of acid, was suggested as the best means of obtaining such a pure glacial acid. Other plans for its preparation, which were detailed, had been tried, and found unsatisfactory."

Mr. T. B. Groves stated that some years ago he had suggested the use of amorphous phosphorus instead of the ordinary variety for making phosphoric acid. He had ever since adopted the practice, and could recommend it for its entire freedom from danger. A little strong nitric acid should be used towards the end of the process.

Mr. Heathfield said that glacial phosphoric acid might have either of two sources: 1st. The heating of phosphate of ammonia strongly. The product of this process was always contaminated by ammonia. 2nd. The combustion of phosphorus in air or oxygen, and the concentration of the resulting acid liquor till it reaches a syrupy consistence, and will gradually deposit crystals. This product was very pure, and adapted for making syrups of the phosphates of iron, which was not the case with the imported acid made by the first method.

Dr. Attfield remarked that small quantities of ammonia had frequently been found in phosphoric acid prepared by acting on phosphorus with nitric acid. The ammonia was found by the combination of nitrogen and hydrogen derived respectively from the nitric acid and the water.

Dr. Parkinson was quite aware of this fact, but had not taken it into consideration in his experiments, as the quantity of ammonia found in the samples was far too large to have such a source.

Mr. D. Hanbury had failed to detect any trace of ammonia in the product of the Pharmacopœia process.

Mr. Heathfield said that any traces of ammonia formed in the second process which he had named could be got rid of

by heating the product to redness in a platinum capsule, but this method was not applicable to the acid made from phosphate of ammonia.

"THE MORPHIA SALTS OF COMMERCE. BY MR. W. E. HEATHFIELD.

"The inquiries of the author had been directed to the amount of moisture existing in these salts, and also to the question as to whether codeia was present in them.

"Three samples of hydrochlorate from different manufacturers had been examined, and found to contain, respectively, 5.8 and 9.8 per cent. of water, estimated by drying at 212 deg. The amount of alkaloid obtained from each of the above (dried at 212 deg.) was 79.7, 76.7, and 74.3. The quantities thus varying inversely as the amount of water.

"It was noticed that the samples containing the most moisture dissolved more readily in water, and their solution was less coloured than those which were originally drier.

"Three samples of acetate were then examined in a similar way, and found to contain respectively 5, 10, and 12.6 per cent. of moisture. It was found that the sample containing least water fused—and became dark-coloured—with loss of structure on application of a water-bath heat; while that containing the most water retained its pulverulent form unaltered at that temperature.

"The morphia precipitated from these samples was found to be remarkably pure, being perfectly soluble in caustic potash; scarcely acted on by ether, and almost entirely free from codeia, as were also the mother liquors from which they were separated.

"The author also quoted experiments by Mr. How to show that, however feasible the conversion of morphia into codeia might appear on a comparison of their formulæ, it could not be carried out; a substance isomeric with codeia had been obtained, but it was by no means identical."

Mr. T. B. Groves said that codeia produced great irritation in some patients even when the quantity taken was very small, and occurred as a contamination of a morphia salt. The present high price of codeia induced the maker to separate it, and it had therefore ceased to be a common impurity in morphia salts.

Mr. Heathfield said that one manufacturer had saved his morphia residues for the past fifteen years, and had recently extracted some hundreds of ounces of codeia from them.

"ON THE ASSAY OF THE ALKALOIDS IN MEDICINAL EXTRACTS. BY T. P. GROVES, F.C.S.

"The object of the author was to devise a process for estimating the strength of the vegetable extracts used in medicine. The method he employed was a volumetric one. Mayer, of New York, and Valser, of Paris, had worked upon the same subject, and all three had fixed upon the same liquid for precipitating the alkaloid, namely, the iodohydrargyrate of potassium. All three also had suggested formulæ for the precipitate. Valser's experiments corroborated those of the author, while Mayer's pointed to a different conclusion. Mayer's experiments were then reviewed, and the details of some reactions given, from which it seemed that, on adding the iodohydrargyrate to the solution of the alkaloid, a point was arrived at when the addition of either liquid caused a precipitate. In this way some of the apparent anomalies might be explained. If, however, time were allowed for the completion of the reaction, more definite results might be obtained. He described the reactions with strychnia, quinine, cinchonine, morphia, nicotina, and codeia, and reviewed Mayer's results, which, he said, were quite anomalous. In estimating the amount of alkaloid in an extract, the alkaloid must first be isolated as far as possible by Stas's well-known method. In estimating the medicinal value of an extract, more exact methods than those now known must be discovered before accuracy can be attained."

Mr. Schacht spoke with warm approval of the author's laborious researches.

Dr. Heathfield said the determination of the strength of the medicinal extracts was a most important matter. As a chemist he begged to thank the author for the additional light he had thrown upon the action of the iodo-hydrargyrate.

Mr. Reynolds called attention to the value of the negative results obtained by the author. He thought that the over-

turning of errors was even of more importance than the setting up of new facts.

"ON THE PREPARATION OF AN IMPROVED WINE OF IRON. BY H. N. DRAPER, F.C.S., AND MR. J. WHITLA.

"The authors first described their observations of the action of light in promoting decomposition of the official wine of iron. To prevent this decomposition, which occurs even in the dark, they suggested that ammonio-citrate of iron should replace potassio-tartrate, and that citrate of ammonia should also be added, to prevent any slight precipitation that might otherwise occur when the wine was exposed to strong sunlight. The formula proposed was as follows:

Ammonio-citrate of iron..... 160 grains.
Crystalline citrate of ammonia 60 "
Sherry 1 pint.

The wine thus prepared was perfectly transparent, and had no disagreeable taste."

"ON COMMERCIAL WINE OF IRON, WITH SUGGESTIONS. BY F. SUTTON, F.C.S.

"Steel wine is well known to vary much in strength. The author obtained seven samples from the leading pharmaceutical chemists in London, and estimated the percentage quantity of iron in them, and also the amount of saccharine residue they yielded on evaporation to dryness. The following table exhibits the results of the experiment:—

	Saccharine residue per oz.	Metallic iron per oz.
1.....	23½ grains.	0.31 grains.
2.....	24½ "	0.35 "
3.....	14½ "	0.70 "
4.....	21 "	0.51 "
5.....	51½ "	1.76 "
6.....	17 "	1.08 "
7.....	28½ "	0.43 "

"No. 5 was made with tartarated iron. The composition of the rest shows that the less saccharine residue, a specimen of sherry, yields on being evaporated to dryness, the more iron it is capable of dissolving. The metal should be digested in light, sound sherry for four months, to obtain the best preparation.

"The examination of a number of samples made with tartarated iron, showed that they contained about one, instead of one and three-quarter grains of iron; the rest having precipitated. The author thought that if a strong, sound sherry were used, and the ingredients allowed to remain in contact for one month, access of air to the vessel being occasionally allowed, a satisfactory preparation could be made by the process.

These two papers were discussed together.

The President said that he could confirm some of the results obtained by the authors. The formula of the Brit. Ph. was not a good one, the product being very liable to change.

Mr. Reynolds suggested the use of ferrum redactum for making the wine.

The President thought pure iron wire preferable. He should certainly try Mr. Draper's formula, which appeared to be an excellent one.

Mr. Robbins spoke of the advantage of adding tartaric acid or bitartrate of potash to the wine when making it by the old plan from iron wire. He had found the preparation of the Brit. Ph. very unsatisfactory, being returned by customers with complaints that it became muddy.

Mr. D. Hanbury also condemned the new formula, and expressed the opinion that the old preparation must still be kept in hand.

Mr. T. B. Groves thought that hydrated oxide of iron and citric acid might be used.

Mr. Heathfield said that the use of the hydrated oxide would lead to the introduction of a variable amount of iron, as the quantity of water contained in it could not readily be determined.

Mr. Groves said he would prepare it from a weighed quantity of the protosulphate.

Mr. Abraham said he was perfectly satisfied with the preparation of the Brit. Ph. He had found it keep well, whereas the old preparation lost its colour.

"A REPORT AS TO THE PURITY OF COMMERCIAL POWDERS OF IPECACUANHA, JALAP, AND OPIUM. BY MR. F. M. RIMMINGTON.

"The indications relied on were principally microscopic, to which was added estimation of amount of ash, not assuming that variation in the latter particular would be proof of adulteration, but considering that such a series of estimations would be collaterally interesting. Eleven samples of ipecacuanha from different localities were examined; all appeared to be genuine, and the amount of ash was tolerably constant, ranging from 2.5 to 3.7 per cent., except in one case, where 7 per cent. was found. Nine samples of jalap had also been examined; seven of them appeared genuine, the amount of ash ranging from 5.5 to 6 per cent., while two contained an abnormal amount of woody fibre, and in these the ash was reduced to 3.5 and 4 per cent. respectively. Of eight samples of powdered opium six were found to contain varying quantities of starch. The percentage of ash was pretty constant, from 5 to 6.5; the variations being independent of the presence of the starch. The author regards the starch as an impurity in the opium as imported, having met with it in this form."

Mr. Schacht regretted that the author had not given his standard of microscopic purity.

"ON THE AMOUNT OF ALKALOID IN COMMERCIAL CITRATE OF IRON AND QUININE. BY MR. J. C. BRAITHWAITE.

"The author had examined fifteen samples of this medicine, which should contain sixteen per cent. of quinine, or about twenty-five per cent. of citrate of quinine. The following is a tabular form of his results:—

In 100 parts.			
	Quinine.		Citrate of Quinine.
1. ..	1.5	..	2.3
2. ..	1.5	..	2.3
3. ..	3.7	..	5.8
4. ..	4.1	..	6.4
5. ..	4.7	..	7.4
6. ..	6.0	..	9.3
7. ..	7.3	..	11.5
8. ..	9.3	..	14.5
9. ..	11.2	..	17.5
10. ..	12.2	..	19.1
11. ..	13.0	..	20.2
12. ..	14.7	..	23.0
13. ..	14.8	..	23.1
14. ..	14.9	..	23.2
15. ..	15.8	..	24.7"

The President said that the paper was a very valuable one, and he hoped that its disclosures would make manufacturers more careful when writing out their labels. It was quite plain that the decimal point was often put in the wrong place, 25.0 being printed for 2.50.

Mr. D. Hanbury called attention to the test ordered in the Brit. Ph., which stated that ammonia would throw down a precipitate soluble in ether. He had found that traces of oxide of iron fell with the quinia, and these of course remained undissolved by the ether. The quantity was too trifling to invalidate the results.

Mr. Heathfield said, that when the citrate had been made without heat there would be no iron in precipitate, but if the solution of citrate of iron had been concentrated by boiling down before sealing, then there would be a precipitate. In the presence of citric acid iron was not thrown down.

"ON THE CALABAR BEAN. BY J. EDWARDS, PH. D., F.C.S.

"The author illustrated the chemical reactions of this poisonous substance, and showed an alcoholic extract which, he said, contained two distinct active principles, both soluble in ether, and both miscible with but not clearly dissolved by chloroform. He also exhibited Dr. Frazer's tincture of Calabar Bean, made by percolation of two ounces of the white kernel with two fluid ounces of rectified spirit. The dose of this tincture is five minims, equal to three grains of the bean, and may be increased to fifteen minims. Dr. Edwards then showed a watery emulsion of the extract, and performed reactions with reagents, similar to those used in testing for strychnia. The general facts relating to the bean

had been already published in a paper and report contained in the *Pharmaceutical Journal* of September."

Dr. Edwards presented specimens of the beans to several members of the Conference.

THE CONFERENCE AND THE AMERICAN PHARMACEUTICAL ASSOCIATION.

At the first sitting of the Conference the President stated that he had received a communication from the Secretary of the American Pharmaceutical Association, informing him that an address of salutation and gratulation had been agreed upon, an engrossed copy of which had been forwarded to the present meeting. The President further explained that, owing to some accident, the said engrossed copy had not come to hand, but recommended that the extract from the volume of proceedings, relating to the resolution, should be accepted in its place, which was immediately agreed to, and the Secretaries were ordered to draw up the draft of a reply, to be submitted for the approval of a future sitting.

At the final sitting of the Conference it was determined that the following resolution should be forwarded to the American Pharmaceutical Association in reply to it address:—

"Resolved:—That the members of the British Pharmaceutical Conference have received with much satisfaction the friendly greetings of their brethren of the American Pharmaceutical Association. They appreciate these expressions of goodwill the more highly, from their being spontaneously offered at so early a stage in the existence of their own Society, and they see, in this circumstance, evidence that their American brethren are watchful observers of all endeavours for the advancement of pharmacy wherever made. The members of this Conference trust that such an example will not be without its influence in this country, and desire to record their feeling that the scientific labours of American pharmacists are worthy of being more extensively known in Great Britain than has been the case hitherto.

"This Conference heartily reciprocates the expression of feelings of interest and goodwill towards the American Pharmaceutical Association, and will gladly embrace all opportunities for communication with its members, several of whom are honourably known in England through their scientific researches."

THE MEETING OF 1865.

At an afternoon sitting of the Conference a resolution was proposed by Dr. Edwards and seconded by Mr. Jameson, and carried, "That the next annual meeting of the Conference be held at Birmingham.

On the motion of Mr. Abraham, seconded by Mr. Commans, power was given to the Executive Committee to elect a local secretary and other officers resident in Birmingham.

The following gentlemen were balloted for, and duly elected, as officers for the ensuing year:—

OFFICERS FOR 1864-5.

President.—H. Deane, F.L.S.

Vice-Presidents.—Prof. Bentley, F.L.S., M.R.C.S.; J. B. Edwards, Ph.D., F.C.S.; J. P. Tylee.

Treasurer.—H. B. Brady, F.L.S., &c., Mosley-street, Newcastle-on-Tyne.

General Secretaries.—J. Attfield, Ph.D., F.C.S., 17, Bloomsbury-square, London, W.C.; R. Reynolds, F.C.S., 13, Briggate, Leeds.

Committee.—J. C. Brough; S. Gale, F.C.S.; T. B. Groves, F.C.S.; D. Hanbury, F.L.S.; A. F. Haselden; J. C. Pooley; B. S. Proctor; F. Sutton, F.C.S.

DINNER.

The Bath Meeting was brought to a conclusion by a dinner, given at the rooms occupied by the principal members of the Conference in George-street. Most of the gentlemen who had taken part in the proceedings, and some members who had been unable to attend the sittings, were present.

When the actual business of dining had been satisfactorily completed, the usual loyal toasts were proposed by the Chairman, Henry Deane, Esq., F.L.S.

Mr. J. Raymond King said that, as one of the oldest of the Bath chemists, he took upon himself the pleasing task of proposing "Success to the British Pharmaceutical Conference." With this toast he coupled the name of the President, to whose influence the unquestionable success of the meeting was mainly to be ascribed. Those chemists who had seen Mr. Deane's name connected with the Newcastle Meeting, had not required any further evidence as to the importance of the movement that had been commenced.

In acknowledging the toast, the Chairman said that Mr. King's compliments, followed by the enthusiastic cheers of so many good friends, had taken away his breath. He thought that there could be no doubt respecting the value of the papers that had been read, and if the members of the Conference would go on producing such papers, they would show that they were not the sort of men to be knocked about by the Legislature, and vilified by the Press. In concluding his remarks, the Chairman referred to the cordial reception of the Conference at Bath, and proposed "The Health of the Bath Members."

Mr. Commans, in acknowledging the toast, said the Chairman gave the Bath men too much credit. The latter had good reason to thank the promoters of the Conference, for the movement had had the effect of bringing them together.

Mr. Jameson also replied to the toast, and stated that he believed Bath would be well represented at the next happy meeting of the Conference.

Mr. Matthews, F.C.S., as one who took a great interest in the welfare of chemists and druggists, begged to propose "The Pharmaceutical Society." He hoped to see that Society flourishing as the recognized collegiate body of the entire trade, while the United Society watched over commercial interests. With the Pharmaceutical Society he could not couple a better name than that of Dr. Attfield, the clever director of the laboratories.

Dr. Attfield said he felt somewhat diffident in acknowledging the toast in the presence of so many older members of the Society. The fruits of the teaching of such men as Pereira, Bentley, and Redwood, had been seen in the papers brought before the Conference. The Council of the Society had provided a niche for himself, and if they thought that he had filled it in a way creditable to the Society he was content. Dr. Attfield finished by proposing "The Health of the Retiring Officers," coupling the toast with the name of Mr. Giles, of Bristol.

Mr. Giles said that he took a deep interest in the Conference, though circumstances had prevented him attending the sittings.

Dr. Edwards, in a most amusing speech, referred to other societies which were represented by members of the Conference. He said, though there were heterogeneous chemists in the trade, he did not despair of seeing them united in one compact body. An allusion to the rapid growth of the United Society, brought the speaker to the subject of the influence exerted by journalists, and he wound up by proposing the toast of "The Pharmaceutical Press," coupling with it the name of Mr. Brough, of the CHEMIST AND DRUGGIST.

Mr. Brough expressed his thanks for the honour done him, in associating his name with such a toast.

"The Executive Committee" was proposed by Mr. Groves, of Blanford. "The Health of Mr. Pooley, the Local Secretary," was proposed by Mr. King. Other toasts and speeches were given by Messrs. Mercer, Brady, Schacht, Reynolds, and Hodge. In addition to the speeches, there were some rather remarkable musical essays by Dr. Edwards, Mr. Schacht, and Mr. Brough.

A METHOD OF DYEING MOSS GREEN.—Before being employed for artificial flower making, or similar purposes, moss should be dyed green, and this is effected by the following process:—Boil about 2 litres of water, and pour into it 0 kil. 016 of picric acid, and a proper quantity of carmine indigo. Vary this quantity according to the shade of green desired, adding picric acid, to obtain a lighter tint. Tie the moss in small bundles, and plunge the upper part into the boiling dye for about a minute, then dry it. —*Moniteur Scientifique.*



LONDON, OCTOBER 15, 1864.

CORRESPONDENCE.—All communications should be addressed to the Editor, at 24, ROW-LANE, E.C.; those intended for publication should be accompanied by the real names and addresses of the writers.

QUERIES.—The Editor cannot undertake to attend to those which are anonymous, or to send answers through the post.

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Everything intended for insertion in the current Month, must be sent in before the 10th, except Employers' and Assistants' Advertisements which will be received until 9 a.m. on the morning previous to publication.

THE BATH MEETING.

The first scientific meeting of the British Pharmaceutical Conference has been as great a success as its most earnest friends could have possibly desired. Having given the Association our support from the first moment that the idea was mooted, and having felt a warm interest in seeing the intentions of its founders carried out in the fullest manner, it is a source of great pride and pleasure to us to think that we have contributed our mite towards the establishment of a scientific body, which we trust will last as long as the British Association itself. We must acknowledge, however, that knowing so well the attainments and business capabilities of the members of the first committee, we never had the slightest doubt of the ultimate success of the undertaking, and consequently felt perfectly safe in reiterating our favourable prophecies.

With such a president as Mr. Deane, whose urbanity won all hearts, and who made every one feel that the domain of science was neutral territory where all could meet as friends and brothers, the result could not have been otherwise than successful. Mr. Deane shone not only as the courteous president, but also as the logical and clear-headed man of science. Hardly a question came before the Meeting upon which he did not bring his life-long experience to bear, and upon which he did not throw some light, either by mentioning fresh facts in connection with it, or by placing old ones in a new position. The acclamations with which his re-election to the presidential chair was received showed the feelings of the members present, and we are desirous, even at the risk of being personal, of letting every chemist and druggist in the kingdom know how much is due to the first President of the British Pharmaceutical Conference.

Mr. Deane's exertions were most ably seconded by the indefatigable secretaries, Dr. Attfield and Mr. Reynolds, as well as by the treasurer, Mr. Brady. It would really be difficult to say what these gentlemen did not do to promote the success of the Meeting. Taking notes under the most adverse circumstances, making diagrams on the black board, reading the almost illegible manuscripts of contributors, and acting generally as guides, philosophers, and friends, all came equally easy to them, and everything was done with good-humoured energy.

The good people of Bath, headed by the Local Secretary,

Mr. Pooley, did whatever they could to make their professional brethren from all parts of the kingdom feel quite at home in their beautiful city, and have established a precedent for hospitality which we trust will be followed by the inhabitants of the future meeting places of the Conference.

As for the Papers read and the discussions thereon, our readers will see from the reports we give that they were most important and interesting. In order to meet the extra demands on our space, we have increased the usual size of the literary portion of our number by one-half. In addition to which, we have been compelled to leave out important letters from "Vigil" and several other esteemed correspondents, our monthly budget of trade news, an article on Dr. Taylor's Report on Poisoning, and several book notices.

The Papers at present we only publish in abstract, except in the cases of the President's able speech and the very elaborate Report of the Bath Committee on Accidental Poisoning, but several of them will be given at length in future numbers of our journal.

The number of subjects suggested for investigation and the small proportion taken up will readily show how illimitable is the field open to the patient worker. Between this and the Birmingham meeting much may be done, and we look forward to that occasion with the hope that a large crop of papers, as interesting and valuable as those read at Bath, will be produced.

A REVIEW OF THE BRITISH PHARMACOPŒIA.

BY J. C. BRAITHWAITE AND J. C. BROUGH.

VIII. NEW AND ALTERED PHARMACEUTICAL FORMULÆ.

In reviewing the Galenical preparations of the British Pharmacopœia, we propose to proceed alphabetically, giving a brief description of the new formulæ, a short notice of the alterations and modifications that some of the old ones have undergone, and an enumeration of such as formerly occupied a position in the three English Pharmacopœias, but have been excluded from the British.

WATERS.

All the medicinal waters of the Ph. L., except two—Rose and Elder, which are ordered to be distilled—are directed to be prepared by one of two processes; either by simple distillation of the proper ingredient with water, or by carefully mixing the essential oil with the water by means of powdered silex, and filtering the solution.

The Ph. E. orders the addition of a little rectified spirit to the ingredients and the water, prior to distillation; whilst the Ph. D. directs the addition of an essence or alcoholic solution of the volatile oil to distilled water, with agitation.

The Ph. Brit. orders all to be prepared by simple distillation with water, and we think wisely, as the waters so obtained are of superior quality, and less liable to undergo change by keeping than those that are prepared by the agency of spirit.

AQUA—Water, and **AQUA DESTILLATA—Distilled Water,** have been already noticed in a previous article.*

AQUÆ ANETHI, CARUI, and CINNAMOMI—Waters of Dill, Caraway, and Cinnamon, are directed to be prepared by distillation of the fruits or bark with water only, the extemporaneous method of preparation by mixing the essential oil with distilled water by means of silex being abolished.

AQUÆ CAMPHORÆ—Camphor Water, is the *Mistura Camphoræ* of the L. College somewhat modified, the rectified spirit being omitted. Dose, 1 ounce, equal to $\frac{1}{2}$ grain of camphor.

AQUA FENICULI—Fennel Water, is a new introduction, prepared similarly to E. process, but without the use of rectified spirit. Dose, 1 to 2 ounces.

AQUA LAURUCERASI—Laurel Water, is another new introduction, prepared according to the D. process. The E. formula directs it to be coloured with compound spirit of lavender. Its medicinal action is sedative, like hydrocyanic acid; and as it is of uncertain strength, and, as far as we are aware, possesses no peculiar advantages over that medicine,

the object of its introduction does not appear very evident, and its use is not unlikely to be attended with danger. Dose, $\frac{1}{2}$ to 1 drachm.

AQUA MENTHÆ PIPERITÆ—Peppermint Water and **AQUA MENTHÆ VIRIDIS—Spearmint Water**—are directed to be prepared by distilling a mixture of the English essential oil and water, and properly so, as when prepared by distilling directly from the herb, as ordered by L. and E., less uniform results are likely to be obtained. The dose of the Menth. Pip. from $\frac{1}{2}$ to 3 ounces; of the Menth. Virid. from 1 to 3 ounces.

Omissions.—**Aqua Anisi, D.; Aqua Cassiæ, E.; Aqua Pulegii, L.; Aqua Sodæ Effervescens, E.**

CATAPLASMS.

CATAPLASMA CONII—Hemlock Poultice. The hemlock leaf, in powder, is ordered in lieu of the same quantity of extract of hemlock, and linseed meal instead of powdered linseed.

CATAPLASMA LINI—Linseed Poultice. Linseed meal mixed with a little Olive oil, is substituted for the powdered Linseed of the L. College. We presume, because the natural oil of the Linseed has a tendency to become rancid, and, also, on account of its odour proving disagreeable to many patients.

CATAPLASMA SODÆ CHLORATÆ—Chlorine Poultice. Remains unchanged except in name, "Chlorinatæ" being changed to "Chloratæ."

No formulæ were given for Cataplasms in E. and D.

CERATES.

A few are transferred to the Ointments, and the others altogether omitted.

CONFECTIONS.

CONFECTIO AMYGDALÆ, L., and CONFECTIO AROMATICA, L., are transferred to the Powders.

CONFECTIO PIPERIS—Confection of Pepper. Powdered Caraway is substituted for the Elecampane and Fennel of the L. College, and the Sugar is omitted. The strength remains the same. Dose, from one to two drachms.

CONFECTIO SCAMMONII—Confection of Scammony. Prepared in accordance with the formulæ of the D. College. Dose, from 10 to 30 grains.

CONFECTIO SULPHURIS—Confection of Sulphur. This is a new addition, and the process given for its preparation is a modification of the D. process, not in L. or E. Dose, from $\frac{1}{2}$ to 1 ounce.

CONFECTIO TEREBINTHINÆ—Confection of Turpentine. Another new addition, the process for the preparation of which is again borrowed from the D. College. Dr. Garrod tells us that he was informed by one of the committee, who had used and taken it largely, that it was, "a valuable and not unpleasant form of administering this somewhat nauseous medicine."

Omissions.—**Confectio Aurantii, L., E. Confectio Cassiæ, L. Confectio Catechu Co., E., D. Confectio Opii, L., E. Confectio Rutæ, L.**

DECOCTIONS.

DECOCTUM ALOES COMPOSITUM—Compound Decoction of Aloes. In this preparation the proportion of the Aloes is increased, whilst that of the Liquorice, Myrrh, Saffron, and Carbonate of Potash is diminished. The formulæ is that of the D. College, which yields a preparation 50 per cent stronger than the E., and still stronger than the L.

DECOCTUM AMYLI, L. (Mucilago Amyli E. D.), is placed with the Mucilages in the Ph. Brit. It is the same strength as that of the L. and E., and half the strength of that of the D. College.

DECOCTUM CINCHONÆ FLAVÆ—Decoction of Yellow Cinchona. Rather less bark is ordered in the formula of the Ph. Brit. than in that of the L. College. It is now directed to be allowed to cool before filtration, as in the E., and the quantity of decoction is ordered to be made up to the bulk of 16 fluid ounces, by allowing sufficient water to trickle through the marc on the filter. In reference to this improvement on the old system of boiling down with a certain quantity of water for a given time, Dr. Redwood remarks, "After having thus adopted so excellent a process for two of the decoctions (Bark and Compound Aloes), it seems extraordinary that the same method should not have been applied to other similar preparations. Why, for instance, should

not be applied to the preparation of the decoction of poppies, sarsaparilla, and taraxacum? It is true that we are told in the instructions for making those decoctions, that the ingredients are to be boiled for ten minutes, and that the product is to be made up to a specified quantity; but we are not told to make up the product by the displacement of the liquid retained in the marc; and as the loss in boiling will vary according to the quantity operated upon, if the product is made up in any other way than by displacement, the product will be subject to variation."* In reply to the query as to whether this decoction should be strained in a hot or cold condition, Dr. Redwood further remarks, "From experiments made specially with reference to this question, I have found that, although the precipitate contains quinine combined with astringent matter, yet the quantity of quinine present in the precipitate is so small that it is not worth while, for the sake of its retention, to give a thick and muddy character to the decoction. I consider, therefore, that the new process is an improvement upon the old one, for by straining the decoction after it has cooled it is obtained in a comparatively clear state. Still, however, it is subject to the formation of a slight precipitate after standing for some days."† And Mr. Squire in his useful work remarks, "The decoction thus made extracts only about half the active principle of the bark; the marc retains about the same quantity of quinine as is found in the decoction."‡ Dose, 1 to 2 oz.

DECOCTUM HEMATOXYLI.—*Decoction of Logwood.* As now prepared, contains cinnamon as in the E. process. It is weaker than the L. or D. Dose, 1 to 2 oz.

DECOCTUM PAPAVERIS.—*Decoction of Poppy.* Is stronger than that prepared by the L. formula, and is boiled down to a definite quantity, instead of for a given time only. That of the E. and D. is of about the same strength, but the seeds are not directed to be removed previously to boiling.

DECOCTUM SCOPARII.—*Decoction of Broom* is an addition in the place of *Decoction Scoparii Compositum*, L. and E.

DECOCTUM TARAXACI.—*Decoction of Dandelion.* The dried root is directed to be employed instead of the fresh root, L., or the fresh herb and root, E. The latter College provides for the varying condition of the root at different seasons, by ordering the whole plant in a fresh state to be used.

Omissions.—*Decoction Dulcamare*, L. E. D.; *Decoction Senegæ*, L., and *Decoction Uvæ Ursi*, L. D. (altered to their respective infusions); *Decoction Chimaphilæ*, L. D.; *Decoction Cinchonæ Pallidæ*, L. E. D.; *Decoction Cinchonæ Rubræ*, E. D.; *Decoction Cinchonæ Cinereæ*, E.; *Decoction Cydoniæ*, L.; *Decoction Gallæ*, L.; *Decoction Granati*, L.; *Decoction Guaiaci*, E.; *Decoction Hordei Compositum*, L. E.; *Decoction Iini Compositum*, D.; *Decoction Mezerci*, E.; *Decoction Myrrhæ*, D.; *Decoction Pyroke*, L. D.; *Decoction Scoparii Compositum*, L. E.; *Decoction Tormentillæ*, L.; *Decoction Tini*, L. (the last Dr. Garrod considers to have been accidentally omitted).

PLASTERS.

Several of these have undergone alterations which appear to be improvements.

EMPLASTRUM BELLADONNÆ.—*Plaster of Belladonna.* The L. College ordered equal parts of extract and plaster of soap to be employed. The E. and D. direct one part of extract with twice as much Resin Plaster, whilst in the Ph. Brit. the Plasters of Resin and Soap are ordered in equal proportions, and these added together are equal to the quantity of extract employed. It is double the strength, therefore, of the E. and D., and the same as the L.

EMPLASTRUM CALEFACIENS.—*Warm Plaster.* This is a new addition, the formula of which slightly differs from that of the D. College. No formulae in L. or E.

EMPLASTRUM GALBANI.—*Galbanum Plaster.* Prepared according to the formula of the E. College. Yellow wax and ammoniacum being substituted for the turpentine, and prepared frankincense of the L. College.

EMPLASTRUM HYDRARGYRI.—*Mercurial Plaster.* Corresponds to the E. College, in which formula Resin is substituted for the Sulphur in the L. process. The D. differs in using oil of turpentine for olive oil.

EMPLASTRUM OPII.—*Plaster of Opium*—is prepared accord-

ing to the D. formula, and contains 1 part of opium in every 10 parts. Powdered opium is substituted for extract of opium, and resin plaster for lead plaster, whilst the water and prepared frankincense ordered in the L. formula are altogether omitted. The E. process uses the powdered opium, and substitutes Burgundy pitch for the prepared frankincense and water of the L. It is much weaker than the other two.

EMPLASTRUM LITHARGYRI.—*Litharge Plaster*, is the *Emplastrum Plumbi* of the L. college. Mr. Squire observes that the plaster of former pharmacopœias wanted adhesiveness. The formula of the Ph. Brit. directs long boiling, which secures sufficient tenacity, and it then resembles the famous strapping plaster of Dr. Scott, of Bromley.*

EMPLASTRUM RESINÆ.—*Resin Plaster.* This process is the same as that of the D. college, hard soap being employed in lieu of Castile soap, directed to be used in the latter. Both L. and E. contain processes for preparing it, and that of L. contains rather less resin than that of E.

Omissions.—*Emplastrum Ammoniaci*, L. E. D.; *Emplastrum Assafœtidæ*, E.; *Emplastrum Cantharides Compositum*, E.; *Emplastrum Cumini*, L.; *Emplastrum Potassii Iodidi*, L.; *Emplastrum Simplex*, E.

ON DIGITALINE.

BY M. LEFORT.†

THE following account of the two foreign digitalines met with in commerce will be of interest to English readers, since this country is, we believe, entirely supplied with the article from Continental sources:—

1. *German or Soluble Digitaline.*—This is said by the author to be made by Merck of Darmstadt. It is of a yellowish white colour, neutral to test paper, completely and readily soluble in water and alcohol. It is, on the contrary, but slightly soluble in ether, sulphide of carbon, and benzole. Tannin completely precipitates it from an aqueous solution. In one particular it will be seen, that of solubility in water, this article differs essentially from that described in the British Pharmacopœia.

When the powder is dropped into hydrochloric acid it immediately dissolves, forming a yellow solution, which gradually turns brown, and finally becomes green. The green colour, however, is less bright than that given by the insoluble digitaline to be presently described, and the solution also remains transparent longer.

As the green colour is developed the solution becomes turbid, and emits an odour resembling that of powdered digitalis or the tincture, and deposits a brown substance, which seems to be a compound of digitaline or of one of the principles accompanying with hydrochloric acid.

When exposed to the vapour of hydrochloric acid this soluble digitaline turns rapidly brown, but exhibits no green colour.

Examined by a microscope with a high power the powder is seen to consist of small semi-transparent fragments, sometimes presenting sharp edges, but of no definite crystalline form. An alcoholic solution evaporates spontaneously to a clear varnish, and no trace of crystallisation can be observed.

2. *French, or Insoluble Digitaline.*—The colour of French digitaline varies from a yellowish white to a bright yellow. It is but very slightly soluble in cold water, a litre only dissolving about 0.50 gramme; it is very soluble in alcohol. Sulphuric ether, sulphide of carbon, and benzole dissolve a small quantity; tannin precipitates it from a saturated aqueous solution.

The powder dropped into hydrochloric acid gives a yellow solution, which, in a few minutes, passes from a bright to a deep green, according to the quantity of digitaline employed; but as the green tint is produced, a deep green-coloured substance is deposited, and a smell of digitalis is evolved.

When exposed to the vapour of hydrochloric acid it is first coloured yellow, then brown, and afterwards green, the characteristic smell of digitalis becoming very apparent. The green powder (like the fresh powder of foxglove leaves) becomes partially decolorized by exposure to sunlight, but the colour can be restored by another exposure to the vapours of the acid.

This last reaction suffices to distinguish between soluble

* "Pharmaceutical Journal," Vol. V., 2nd Series, p. 472.

† *Ibid.*, p. 471.

‡ "Companion to the Pharmacopœia," 2nd edit., p. 71.

* "Companion to the Pharmacopœia," 2nd edit., p. 135.

† Extracted from the *Chemical News*.

and insoluble digitaline, and the author considers it sufficient to prove the presence of the latter.

An alcoholic solution of French digitaline (Menier's), left to evaporate spontaneously, and then examined by the microscope, showed a multitude of small spots, sometimes round and sometimes oval, which gave to the residue the cellular aspect of organized structure. This appearance the author considered to support the opinion of Homolle, who supposed that insoluble digitaline was never a single and constant product; and he, in fact, determined that French digitaline contained some volatile matter which communicated its characteristic odour.

The whole of M. Lefort's experiments showed that French and German digitaline differ considerably in their chemical and physical properties, and he is disposed to infer that as great differences may be found in their therapeutical properties.

With regard to the separation of digitaline by means of dialysis, the author found that a simple solution of the substance dialysed, and the digitaline could easily be found in the diffusate. But when a mixture with animal and vegetable substances was placed on the dialyser, the deposit obtained on evaporating the diffusate gave but indistinctly the characteristic reactions of digitaline. Among these characters the most conclusive appear to be the bitterness of taste, the green coloration of liquid hydrochloric acid, and the development of the peculiar odour of digitalis on exposure to the vapour of hydrochloric acid.

THE USE OF METHYLATED SPIRIT.

The following extract from the Report of the Principal of the Laboratory of the Commissioners of Inland Revenue cannot fail to interest our readers:—

Nothing has transpired since the date of my last Report to lead me to suspect that the revenue is endangered by allowing methylated spirit to be used duty-free in the arts and manufactures. It is possible that the spirit in its impure state may to some small extent be illicitly used, seeing that the present duty on spirits affords a strong incentive to the commission of the fraud; but it would be too much to expect that, while all other duties are always in some degree evaded, this one should be exempt from the same evil. There can, however, be no doubt that any loss which the revenue may sustain through the improper use of methylated spirit is insignificant when compared with the benefit which accrues to the manufacturing interests of the country from the permission to use such spirit duty-free.

From the character of the samples which have been forwarded to my department within the past year under the supposition that they were illegal, it would appear that the attempts to apply methylated spirit to purposes not contemplated by the Legislature are directed more to the use of the spirit in medicinal preparations than to its introduction as a beverage. The samples referred to comprised five of hyponitrous ether, one of laudanum, one of tincture of rhubarb, one of wood spirit, three of methylated spirit which had been attempted to be purified, two samples termed "Indian brandec," one termed "Indian whiskee," and one "Hollands whiskee." The four last-named samples might, from the names given to them, be supposed to be imitations of brandy and whiskey, which, however, they did not in the least resemble, as they were simply very impure hyponitrous ether, highly sweetened, and made from methylated spirit, the "brandec" being coloured. They were very nauseous, and would never be drunk as a beverage, except by persons having a most vitiated taste; and the price at which I am informed they are sold—namely, from 2d. to 3d. per ounce, or at the rate of from 26s. 8d. to 40s. per gallon—appears to confirm the statements made by those who prepare and vend the articles, that they are purchased by the poor classes, not as substitutes for potable liquors, but as specifics for many complaints which they are advertised to cure. I may add that the sale of these compounds appears to be confined to certain localities in Lancashire and Cumberland.

The wood spirit used in the methylation of alcohol is invariably tested in the laboratory as to its fitness for the purpose for which it is intended, and during the past year ninety-five samples have been so examined.



Cooley's Cyclopædia of Practical Receipts, etc. Fourth Edition, revised and enlarged by ARNOLD J. COOLEY, and J. C. BROUGH. London: JOHN CHURCHILL, AND SONS, New Burlington-street. 1864. Pp. x. 1393.

THE rapid strides that have been made in chemistry, pharmacy, and technology, during the last few years have necessitated the issue of a new edition of this standard work of reference. As a manual which has long had a place on the bookshelves of every pharmacist, it would be superfluous for us to speak of its general scope and character, believing that they are well known and highly appreciated by all our readers. We shall, therefore, confine our remarks more particularly to the emendations and additions the work has received at the hands of Mr. Cooley, the original editor, and his successor Mr. J. C. Brough. In the Advertisement to the new edition we are informed that the articles under the letters A and B were almost entirely re-written by Mr. Cooley, but at this point, owing to ill health and a frightful accident, from which he has only just recovered, that gentleman was unable to proceed with the work, which was then placed in the hands of Mr. Brough for completion.

On comparing the new edition with the last, which was issued in 1856—eight years ago, the first improvement that strikes us is the increased size of the page, which apparently holds about 25 per cent. of additional matter, the margins being proportionally smaller. Not only this, the number of pages, already very large, has been increased by about 50. The type, too, in which the work is printed has been altered, the catchwords being in a thickened letter, which makes it more easy to find them than when printed in ordinary type. Synonyms are printed in ordinary small capitals, and a few simple signs serve to mark certain words or definitions, as obsolete, obsolescent, colloquial, or vulgar. The subheadings are printed in small letters of the same type as the chief headings, and not as heretofore in the same letter. These seem really little matters to read of, but when, as in the case of the present work a book is being continually and hurriedly consulted, a few simple typographical aids are most valuable.

Turning first to the word "Acidimetry" we find the article greatly enlarged, and the same may be said of "Alkalimetry," the methods of the latest experimenters on these subjects being given at length, as well as cuts of the most improved apparatus. "Alcoholometry" has been greatly enlarged; a most elaborate table of the real strengths and equivalent volumes of spirits at different temperatures being appended. This table was expressly re-arranged and adapted from Gay Lussac, by Mr. Cooley.

"Alkaloids" has received special attention. Stas's and Fresenius's methods of extraction and identification being given.

"Arsenious Acid" is very full, and is illustrated by magnified drawings of the most characteristic crystals of this deadly poison. This article may really be considered a monograph on the subject, taking up as it does nearly sixteen pages of the book, and being illustrated by thirteen well-executed cuts of apparatus.

Under B. we find the article on "Bleaching" greatly improved and much extended. The same may be said of "Blister," "Brass," "Bread," "Brewing."

"Carbolic Acid," as might have been expected, has been enlarged, and Crookes's process for the preparation of the chemically pure substance has been given. Under "Colloidion" we have recipes for making the blistering and photographic varieties of this useful substance. Under "Crucibles" additional information is given as to their use and manufacture.

The article on "Dialysis" contains a succinct account of Mr. Graham's labours; and those on "Electroplating" and cognate subjects have been greatly enlarged, full directions being given for carrying out the various electro-metallurgical processes on a small scale.

Under "Equivalents" a valuable addition has been made, by giving the unitary formulae of all the more common substances. This table will be found of the greatest possible use in reading current scientific literature, which is often a sealed book to those educated under the more ancient

principles. The equivalents of the elements from the newest possible sources are also given.

Under "Furnaces" we find references to those of Griffin and Gore.

The "Hypophosphites" have an extra amount of space devoted to them, and the newest formulæ from the writings of Messrs. Parrish and Procter—two great authorities on the subject—are given.

Under "Illumination" the latest experiments of Dr. Frankland, on the comparative illuminating powers of various substances, are described; and under "Lamps" much information respecting the new mineral oils has been added. Under "Mineral Oils" will be found ample directions for testing these illuminating agents, which will be very useful to many of our country readers.

The articles under general headings such as "Extracts," "Lotions," "Pills," &c., have all been enlarged by the addition of new receipts.

Under "Iodine" Mr. Stanford's process has received minute attention. The manufacture of "Incombustible Fabrics" and "Safety Matches" is also described. Under "Patent Medicines" we find a recipe for making Chlorodyne according to the analysis made of "Browne's Original," by Dr. Ogden.

Under "Phosphoric Acid" the latest views, in accordance with the researches of Mr. Graham, are given; and under "Phosphorus" an account of the amorphous variety of that element will be found. Under "Pyroxylin" Lenk's experiments in gun cotton, as a substitute for gunpowder, are noticed, and the method of making it according to his process is described.

Our readers will of course see that these are only a few of the additions and emendations taken at random from the contents of this "Banting" of encyclopædias, but they are sufficient to show the pains that have been taken to render it as complete as possible.

The appendix contains the *materia medica*, and the preparations of the "British Pharmacopœia," arranged in alphabetical order under their English names, references being made to those already described in the body of the work. This appendix has been rendered necessary by the long-delayed appearance of the "British Pharmacopœia." Had the editors of that work kept proper faith with the public there would have been no need to have consigned a description of it to an appendix. However, much is gained by having a condensation of its contents in the very compact form in which it now appears.

As a test of the information contained in this work being brought down to the very latest period, we may mention that the following words will be found in their places, with descriptions appended to them of a length according with their importance:—Cæsium, Dialysis, Leucaniline, Rubidium, Spectral Analysis, Thallium, and many others of less importance. We trust that we have said enough to convince our readers that the "new face" that has been put upon their "old friend" is one that is well worthy of its ancient and well-tested excellence, thus making it the newest and best dictionary of practical receipts in existence.—C. W. Q.

BOOKS RECEIVED.

Squire's Companion to the British Pharmacopœia. Second Edition. The improvement in this edition are very great, and will be pointed out in a future notice.

Richardson's Packing Case Tables.

Watts's Dictionary of Chemistry. Part xx. Leucic Acid to Light.

The *Société Imperiale d'Agriculture* has offered a prize of 2,000 francs, to be given in 1867, for the best analyses of the following woods:—Oak (heartwood) of the age of at least forty years (*quercus robur* or *pedunculata*); ash (*fraxinus excelsa*), of the age of at least twenty-five years—the whole of the wood except the liber and bark; pine (*pinus maritima* or *silvestris*) of the same age, and poplar (*populus tremula* or *alba*) of the age of twenty years. Analyses of the same trees five years old are also to be made, with the view of comparing the composition of wood of different ages. Specimens of the woods and of the principles obtained from them, must be sent with each paper. *Paris Correspondent of the Chemical News.*



WHOLESALE AND EXPORT DRUG COMPANY.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

October 8, 1864.

Sir,—Permit me, on behalf of the Directors of the Wholesale and Export Drug Company (Limited), to express their best thanks for the response that has attended the announcement of their undertaking.

More than one thousand shares having been agreed to be taken by the trade in a single day, and as applications are being since daily received, the Directors wish to take this opportunity of reminding intending shareholders that they can only keep the share list open for a limited period.

The Directors would not have deemed it necessary to notice the many absurd rumours that are spread against the Company from interested motives, if it had not been industriously asserted that the Wholesale and Export Drug Company, Limited, had been promoted by gentlemen not in the trade. The Directors wish to express their most positive and unqualified contradiction of this statement, and to declare that the origin of this Company entirely rests with the gentlemen who are announced as the present directors.

They deem it necessary to correct only another statement as to the proposed Manager for the Company, and to say, that although they have received several very important offers, that they intend to leave this appointment entirely open, so that they may be governed by the practical experience and antecedents of the gentlemen chosen, and that their decision may be endorsed by the judgment of all the shareholders.

I am, Sir,

Your most obedient servant,
C. F. BURT, Secretary.

WHOLESALE AND EXPORT DRUG COMPANY, Limited.
Registered Temporary Offices, 11, Great Carter Lane, St. Paul's.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

Manchester, October 11.

Sir,—I am very glad to see the announcement in your last number, of the formation of the Wholesale and Export Drug Company, Limited.

I think it is an undertaking that will succeed, for two reasons. They are—

1st. That it is founded upon a sound principle.

2nd. That the management of it appears to be in right hands.

Every chemist and druggist knows what an advantage it would have been to him if he could have shared in the profits of his wholesale orders, as well as that of his retail business, and every one knows how the co-operative principle, when once started, rapidly acquires strength; and I think I can also foresee in this undertaking the promise of a powerful union in the trade that will promote not only the pecuniary, but also the social interests of chemists and druggists.

As to the management, I recognise the same gentlemen who so distinguished themselves by their energy and perseverance in the successful defence of the interests of the trade, when attacked last year by the Medical Council. They then showed that the chemists and druggists could organize and use the strength thus gained. The success they then seemed politically, I think, as men of business, they will also achieve in money matters. That the directors are not chosen simply out of regard to an elevated social position I think is an advantage, as a heavy price is often enforced for ornamental names, and the whole business is left to subordinate.

I think the very fair way in which the directors have placed the matter before the trade reflects great credit upon them, and I am proud that we have such public spirit in our body.

As their proposition invites the co-operation of all, without any charge or risk, should the business not be concluded, I should hope that every chemist and druggist will at least take some interest in it, even if it be for only one share.

To show that I practice what I preach, I shall take twenty-five shares, and I send you my card to prove that I am a

CO-OPERATIVE CHEMIST.

MR. PROCTOR AND THE TWO SOCIETIES.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

Sir,—From remarks made by yourself and Mr. Wade in your last number, it seems to be thought that this correspondence has gone about far enough. As I am of the same opinion, I will endeavour to make this, my last letter on the subject, a brief one.

It is said that I have altered my tone, and it is conjectured that this is the result of influence from the officials of the Pharmaceutical Society. No one has had any influence over my contribution but your own correspondents.

In my first letter I stated that I addressed those who were willing to see the opposite side of the question to that exhibited by your general correspondence (and I trust there are many to whom my letters have not been unacceptable). I desired to show that there was a measure of justice due to the conservative party, and I have endeavoured to make all my remarks subservient to this object. In my second letter, it being an answer to your other correspondents, I was not entitled at liberty to choose my own matter. I was bound to answer their questions, and in doing so to make statements which might otherwise have been left unsaid; if, in doing so, there has been an apparent change in my feelings, the change has been in appearance only.

I was asked to point out the "want of moderation," and was in a measure bound to do so, even should it be unpleasant to those who asked it. I was asked why the United Society had not met with the respect which they considered they deserved. In answering such a question to the best of my ability, I am not to be blamed for the unpalatableness of what I had to state. I may be mistaken in my supposition, but if so, it is for those who are better informed to correct me. I should not have

noticed the matter at all had it not been that silence might have implied that the Pharmaceutical Council were not defensible, and the object of my writing was to defend their proceedings where I could. It is to avoid a continuance of such that I am desirous of letting the subject drop; not, however, till I have noticed one or two points which will illustrate how, in the defence of my position, I may be obliged by my respondents to enlarge upon the weak points of their institution, which I should willingly enough leave alone.

I was under the impression that the transactions of the United Society of Chemists and Druggists were made public to all the readers of the CHEMIST AND DRUGGIST, as the transactions of the Pharmaceutical Society are laid open to all readers of the *Pharmaceutical Journal*. It seems in that respect I was mistaken. I think it desirable that the United Society should make such an arrangement, and have no doubt it would be practicable and satisfactory.

I did not question the existence of the 3000 members of the United Society or the existence of a list of them. I was mistaken in supposing that the list was not printed; but I was not mistaken in supposing that the Secretary was unable to supply me with a classified list such as I had spoken of; and the list supplied does not afford "the same satisfaction" which I obtained in reply to my application regarding the executive. This may appear unintelligible without an explanation.

The list of executive sent me (last year's) on comparison with the list of chemists and druggists in the London Directory showed that of the twenty-three gentlemen on the list, eleven were chemists and druggists. Of the remainder, five were found on the list of wholesale druggists, and seven were not discovered to be in the trade; but considering the custom of retaining the old names instead of the names of the present proprietors of old businesses, probably some, at least, of these seven were really chemists and druggists on their own account; this I considered so far satisfactory. Now, with regard to the member list, we are informed that the United Society originally contained only *bona fide* chemists and druggists, but its rules do not appear to limit its members to such, and the list of members sent to me does not enable me to ascertain how far the members of the United Society are members of the trade. I regard it as unsatisfactory that there is no distinction drawn between the assistant or apprentice and the principal, or between those who carry out what we call the legitimate trade of chemists and druggists, and those who are engaged in some collateral calling, such as a stationer selling patent medicines, &c. To form some estimate upon this question, I naturally looked for all the members of the United Society in my own town, and compared the list with the list of chemists and druggists in the Directory. Of the forty-two Newcastle members, twenty-nine appear to be in business on their own account; of the thirteen remaining, the majority at least are subordinates of some grade or other. In one or two cases it is mentioned on the list that "Mr. A. is at Mr. B.'s," or "Mr. N. at Mr. M.'s;" but in most cases there is no distinction drawn: consequently, we have yet to learn whether the United Society with its 3000 members contains more *bona fide* chemists and druggists than the Pharmaceutical Society with its 2000. I do not make any assertion regarding the number, but considering the facility for entrance, and the lowness of its subscription, the United Society ought to contain two or three times as many if it enjoys an equal share of confidence among the trade at large. It soon will do so if it goes on adding 1000 members per annum to its list.

Mr. D'Aubney thinks my statement of the quantitative relation between the United Society and the outsiders inquantitative with my figures: let me quote the statement and the figures together.

"The United Society is only a very small part of the outsiders, and only a very small portion of the United Society had voted in the election of its executive." Taking the United Society as 3000, and the outsiders above the age of ten, as 13,000, I think the former is only a very small part of the latter; or taking the *bona fide* chemists and druggists in the United Society as little more than 2000 (I am sorry I cannot be more accurate as to their actual number), and the number of *bona fide* chemists and druggists among the outsiders as little more than 7000, I still consider my statement holds good. Supposing the United Society to consist of 2000 or 3000 members, and 200 or 300 were present, and voted at the election of the executive, I consider the latter only a very small portion of the former. I do not know that 200 or 300 was the number present, but I should think it as likely it fell short of that number as that it exceeded it. I do not see that these statements give occasion for the penultimate and antepenultimate paragraphs of Mr. D'Aubney's letter.

I am asked to suggest a more constitutional plan of election. I do not think any practicable mode of election would enable the executive of the United Society to be regarded as the representatives of the outsiders; but as representatives of their own members throughout the country, I think an improvement upon the present plan would be to adopt that in use in the Pharmaceutical Society, where every member at a distance can nominate or vote for whom he pleases without the expense of going to London. If I were to join the United Society, a thing not unlikely, I do not see what voice I could have in the management of its affairs, or what control over the money paid, so long as I could not even vote in the election of the executive without the trouble and expense of a journey to London.

I have not altered my views of the United Society since I began this correspondence. I do not think it the "great success" which some of its supporters do, nor do I think it so useless as some of its opponents do. It has done some good and may do more; but there are some features which I should wish to see altered before becoming myself a member; and, in the mean time, when occasion arises, I will endeavour to do, as I always have done, my best to see the just claims of the outsiders fairly represented.

In writing this communication I have done my best to avoid anything that might be thought an objectionable "tone," I dare say my respondents are fully aware how difficult it is to do so, and will excuse the silence which I shall prefer to the risk of again writing what might be unpleasant to them.

Yours faithfully,

BARNARD S. PROCTOR.

11, Grey-street, Newcastle, September, 1864.

LETTER FROM MESSRS. CLAY AND ABRAHAM.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—We are very much obliged to your correspondent "An Outsider," whose letter you inserted in your last number, for the generous proposition to subscribe towards reimbursing us for the loss which we have lately sustained, and to Messrs. D'Aubney, Barnaby, King and Wade, for

sanctioning it with their subscriptions, and also to yourself; but we beg you to make known to those gentlemen and to your readers, that although much consoled and gratified by the kind and liberal sentiments everywhere expressed, we do not desire any pecuniary expression of it.

The valuable comments upon this case which you have already circulated leave nothing for us to say, except to express a hope that you will, as opportunity offers, aid in the endeavour to obtain such a modification of the law as will render it less oppressive, without being less protective.

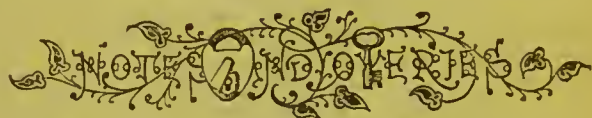
We shall be obliged if you will put upon record the fact, that although the strychnia was near the James's powder, it was not placed amongst a number of ordinary and innocent articles, but away from such, in one of fourteen peculiar bottles; and although it had been, unknown to us, reduced to powder, the bottle could not have been selected on that account, because it was opaque, and the character of the contents could not be seen until it was opened. And further, that the inscription upon it, "Poison," was sufficiently legible to be read across the shop.

By the word "Outsider" we understand, a gentleman who is a chemist and druggist, but not a pharmaceutical chemist. It is especially gratifying to us to find that the generous feelings which we have acknowledged are not confined to one branch of the profession.

We are, Sir, your obedient servants,

CLAY and ABRAHAM.

Liverpool, 8th October, 1864.



A. B. W. H.—Your query is strictly medical.

J. C. A.—Your letter is of too personal a character for publication.

Bookworm.—We fear you will not be able to obtain scientific American works at the terms you mention. Try Trübner and Co., 60, Paternoster-row.

Correspondence from "Vigil;" R. G. J.; M.R.C.S., L.A.C.; and others, in our next number. See leader.

Samples of Meynet's cod-liver oil pills have been received.

GAZETTE.

BANKRUPTS.

GEORGE POPE GARLICK, Feckenham, Worcestershire, chemist.
RICHARD RICHARDSON, Montgomery, druggist.
HENRY HOWTON, Dudley, chemist.

PARTNERSHIPS DISSOLVED.

Foot and Go., Battersea, chemists.
M. W. LOMAS, Ashton-under-Lyne, druggists.
STEVENS, FORMAN, and Co., Birmingham, wholesale druggists.
TABBERNER and SIDEBOTTOM, Manchester, wholesale druggists.



THE market for chemicals has been influenced by the high prices of money; the trade have materially restricted their purchases to the most pressing wants, and prices in many cases show a great decline. While money continues so dear, and distrust prevails, we do not look for any improvement in business. Only small sales have been made in Tartaric Acid, and the latest quotations are now nominal at 1s. 5½d., 1s. 5½d. Citric Acid is lower, sales of the best made at 1s. 7d. to 1s. 7½d.; a parcel of 50 kegs, old make, sold in public sale at 1s. 5d. to 1s. 5½d. Oxalic Acid has declined to 9½d., at which price only limited sales have been made. Sal Acetos is dull at 12d. Chlorate of Potass is dull at 12d. Bichromate of Potass has declined to 6½d., and very dull. Prussiate of Potass remains nominal at 11½d. Iodine is dull, and the price has fallen to 5½d. to 5¾d. A large business was done in French Quinine at 5s. 6d.; there are now buyers at 5s. 7d. to 5s. 8d. English is nominal at 6s. to 6s. 3d. Sulphate of Copper is dull, and almost nominal at 29s. to 30s., although a few small lots of fine have realized 32s. to 33s. Cream Tartar has declined to 100s. to 105s. for the best. Only moderate parcels of Soda Crystals have been taken at 95s. ex ship. Ash is dull at 2d. Flour of Brimstone is quiet at 12s. Sulphate of Ammonia is steady at 13s. 3d. to 14s. 3d., according to quality. Sal ammoniac is without change; best, 37s. 6d., and seconds, 35s. 6d. to 36s. Carbonate of Ammonia in good demand at 5½d. Refined Saltpetre has declined 6d. per cwt., with a fair business doing, the prices being now 34s. to 34s. 6d. per cwt. Linseed Oil has gradually declined, and to-day the price is 34s. spot, 33s. in Hull to

end of December, and 33s. 9d. for the first six months' delivery. Ashes are without change, and only a very small business is doing at our quotations. In Rosin no sales, and prices generally are without change, but quite nominal; to sell any quantity much lower prices must be taken. Turpentine has declined to 63s., at which price only small sales are effected.

In the Drug market business has been confined to the small public sales brought forward; there has been a general indisposition shown to purchase, and only small parcels have been taken for immediate wants at moderate prices. To force sales however to any extent, considerably lower prices would have to be taken. Some parcels of Turkey Opium sold at 15s. 6d. to 17s. Turkey Blue Galls 155s. to 160s. China Rhubarb is rather better; sales of mid flat have been made at 3s. to 3s. 2d., and round 3s. to 3s. 1d. Gambier is easier, ordinary and middling selling at 23s. to 25s., and Cubes 30s. to 30s. 6d. Cutch is dull at 22s. to 23s. Gums are dull, and scarcely any business doing. Fine Cape Aloes are dearer; small lots sold at 49s. to 51s. Castor Oil has sold to a moderate extent at 4½d. for pale yellow up to 6½d. for fine pale, and some Italian 7d. to 7½d. Oil of Anniseed dull at 6s. 2d. to 6s. 3d. Oil of Cassia is dull; only a few cases sold at 8s. 3d. to 8s. 4d. Citronelle quiet, no change. Some few lots Gum Senegal of indirect import sold at 100s. to 102s., being dearer. Snake, Seneka and Pink roots are all dull at our quotations. A parcel of New Cod Liver Oil sold at 12s. to 16s. 6d. being the full value. Camphor is dull; a small sale, made at 85s. and now no further buyers above 82s. 6d. Ipecacuanha is steady; fine, 7s. to 7s. 3d. Jalap quiet; fine 5s. to 5s. 4d. Bark has met a steady sale at full prices. No change in other goods worth reporting, but holders cannot sell at last month's prices, except for retail quantities.

PRICE CURRENT.

These quotations are the latest for ACTUAL SALES in Mining Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the CASH PRICES IN BULK. They will, however, be able to form a tolerably correct idea of what they ought to pay.

	1864.	1864.	1863.	1863.
	s. d.	s. d.	s. d.	s. d.
ARGOL, Cape, per cwt.	32 6	100 0	85 0	100 0
French	00 0	85 0	40 0	00 0
Oporto, red	46 0	48 0	45 0	47 0
Sicily	72 6	75 0	70 0	75 0
Naples, white	65 0	73 0	65 0	80 0
Florence, white	35 0	00 0	87 6	95 0
red	80 0	85 0	80 0	85 0
Bologna, white	92 6	97 6	110 0	115 0
ARROWROOT, (duty 4½ per cwt.)				
Bermuda, per lb.	1 6	1 9	1 10	2 1
St. Vincent	0 4½	0 7½	0 6½	0 3½
Jamaica	0 3½	0 7	0 5½	0 7
Other West India	0 3½	0 4½	0 5½	0 6
Brazil	0 2½	0 3	0 3½	0 4
East India	0 3½	0 5	0 3½	0 4½
Natal	0 5½	0 8	0 0	0 10
Sierra Leone	0 4½	0 5½	0 5½	0 5½
ASHES, per cwt.				
Pot, Canada, 1st sort	31 0	31 6	31 6	32 0
Pearl, ditto, 1st sort	34 0	35 0	30 0	0 0
BRIMSTONE,				
rough, per ton	140 0	150 0	135 0	140 0
roll	195 0	210 0	185 0	0 0
flour	240 0	250 0	220 0	260 0
CHEMICALS,				
Acid—Acetic, per lb.	0 4	0 0	0 3½	0 0
Citric	1 7	1 7½	1 5	0 0
Nitric	0 5	0 5½	0 5	0 5½
Oxalic	0 9½	0 0	0 8	0 0
Sulphuric	0 0	0 0	0 0	0 0
Tartaric crystal	1 5½	0 0	1 5½	0 0
powdered	1 6	1 0½	1 0	0 0
Alum	120 0	125 0	140 0	150 0
powder	140 0	145 0	155 0	0 0
Ammonia, Carbonate, per lb.	0 5½	0 6½	0 5½	0 6
Sulphate	269 0	275 0	280 0	300 0
Antimony, ore	160 0	180 0	200 0	230 0
crude	20 0	0 0	22 0	23 0
regulus	36 0	36 6	40 0	0 0
French star	30 0	30 0	30 0	0 0
Arsenic, lump	15 0	15 6	16 0	17 0
powder	6 0	7 0	7 0	7 6
Bleaching powder	11 0	12 0	9 9	10 3
Borax, East India refined	0 0	0 0	0 0	0 0
British	56 0	0 0	50 0	0 0
Calomel	2 9	0 0	0 0	2 9
Camphor, refined	1 3	1 4	1 10	2 3
Copperas, green	52 0	55 0	57 0	60 0
Corrosive Sublimato, per lb.	2 4	0 0	1 11	0 0
Green Emerald	0 0	0 0	0 0	0 0
Brunswick, per cwt.	0 0	0 0	0 0	0 0

	1864.	1864.	1863.	1863.
	s. d.	s. d.	s. d.	s. d.
CHEMICALS.				
Iodine, dry	0 5½	0 5½	0 4½	0 4½
Magnesia, Carbon per cwt.	42 6	45 0	42 6	45 0
Calcined	1 0	1 8	1 6	1 8
Minium, red	21 0	24 0	21 3	21 6
orange	32 0	33 0	32 0	33 0
Potash, Bichromate per lb.	0 0½	0 0	0 8½	0 0
Chlorate	1 0	0 0	0 11½	0 9
Hydriodate	0 0	0 6½	0 4	0 5
Prussiate	0 11½	0 0	0 11½	0 11½
red	1 10	1 11	1 11	0 0
Precipitate, red	2 11	0 0	2 9	0 0
white	2 11	0 0	2 9	2 10
Prussian Blue	1 0	1 10	1 0	1 10
Rose Pink	29 0	0 0	29 0	0 0
Sal-Acetos	1 0	0 0	0 10½	0 10½
Sal-Ammoniac	35 6	37 6	36 0	38 0
British	3 0	8 6	3 0	8 6
Salts, Epsom	5 0	5 6	5 0	5 6
Glauber	0 2	0 0	0 2	0 0
Soda, Ash	11 9	12 0	11 9	12 3
Bicarbonate	0 0	95 0	92 6	95 0
Crystals	37 0	38 0	37 0	0 0
Sugar Lead, white	28 0	28 6	20 0	0 0
brown	6 3	0 0	6 6	0 0
Sulphate Quinine	5 7	5 8	6 0	6 3
British, in bottle	14 6	15 0	14 6	15 0
Foreign	0 11	1 0	0 10½	1 0
Sulphate Zinc	3 0	3 4	2 8	3 0
Verdigris	3 2	3 3	2 0	2 1
Vermilion, English	29 0	31 0	30 0	31 9
China				
Vitriol, blue or Rom. per ct.	3 0	4 4	3 0	4 3
COCHINEAL, per lb.	2 0	3 4	2 8	3 6
Honduras, black	3 0	3 3	2 11	3 2
silver	2 5	2 10	2 10	2 11
Mexican, black	0 0	0 0	0 0	0 0
silver	3 0	3 10	3 3	3 7
Lima	2 11	3 1	3 2	3 3
Teneriffe, black				
silver				
DRUGS,				
Aloes, Hepatic	100 0	170 0	100 0	190 0
Socotrine	170 0	300 0	150 0	280 0
Cape, good	47 0	51 0	49 0	51 0
inferior	30 0	46 0	30 0	46 9
Barbadoes	50 0	330 0	50 0	360 0
Ambergris, grey	16 0	18 0	16 0	20 0
Angelica Root	20 0	35 0	20 0	35 0
Auisced, China stor.	105 0	110 0	120 0	0 0
German, &c.	24 0	39 0	19 0	23 0
Balsam, Canada	0 10	0 11	1 0	0 0
Capivi	1 9	1 10	1 3½	1 5
Peru	4 9	0 0	4 9	4 10
Tolu	3 9	0 0	3 9	3 10
Bark, Cascarilla	25 0	36 0	25 0	40 0
Peru, crown & grey	0 9	2 3	0 7	2 2
Calisaya, flat	3 0	3 6	3 6	3 8
quill	2 9	3 3	3 0	3 4
Carthageana	1 0	1 10	1 2	1 8
Pitayo	1 7	2 4	1 8	2 6
Red	2 6	9 0	2 6	8 6
Bay Berries	0 0	0 0	22 0	40 0
Bucca Leaves	0 3	0 11	0 2½	1 6
Camomile Flowers	25 0	75 0	35 0	75 0
Camphor, China	85 0	0 0	115 6	140 0
Canella alba	23 0	33 0	19 0	38 0
Cantharides	2 7	2 8	2 0	2 3
Cardamoms, Malabar, good	5 0	6 0	5 3	6 0
inferior	4 6	5 0	4 9	5 3
Madras	2 3	4 0	3 8	5 3
Ceylon	5 0	5 5	5 0	5 2
Cassia Fistula	14 0	22 0	20 0	35 0
Castor Oil, 1st pale	0 6	0 6½	0 5½	0 6½
2nd	0 4½	0 5½	0 4½	0 5½
inferior and dark	0 4½	0 4½	0 4½	0 4½
Bombay, in casks	0 4½	0 4½	0 4	0 4½
Castorum	1 0	20 0	1 0	20 0
China Root	10 0	23 0	12 0	15 0
Cocculus Indicus	20 0	24 0	11 0	13 0
Cod Liver Oil	6 0	16 6	9 0	13 6
Colocynth, apple	0 6½	0 11	0 7	1 0
Colombo Root	120 0	160 0	50 0	75 0
Cream Tartar				
French	97 6	100 0	110 0	112 6
Venotian	105 0	107 0	112 0	0 0
grey	95 0	100 0	100 0	105 0
brown	85 0	92 6	97 0	102 6
Croton Seed	70 0	85 0	50 0	60 0
Cubebs	97 0	100 0	100 0	115 0
Cumin Seed	27 0	34 0	26 0	35 0
Dragon's blood reed	200 0	300 0	200 0	300 0
lump	90 0	260 0	95 0	260 0
Galangal Root	16 0	18 0	18 0	20 0
Gentian Root	23 0	0 0	18 0	19 0
Guinea Grains	55 0	57 0	70 0	72 6
Money, Narbonne	40 0	80 0	50 0	80 0
Cuba	26 0	33 0	24 0	36 0
Jamaica	27 0	63 0	20 0	63 0
Ipecacuanha	7 0	7 3	7 0	7 6
Isinglass, Brazil	1 10	4 6	1 4	3 11
East India	0 6	4 3	0 6	3 9
West India	3 2	3 4	3 4	3 6
Russian	9 0	11 0	9 6	13 0
Jalap	0 9	5 4	0 10	4 3

DRUGS—continued.

	1864.	1864.	1863.	1863.
	s. d.	s. d.	s. d.	s. d.
Juniper Berries per cwt.	6 0	9 0	8 0	9 0
German and French . . .	8 0	10 0	8 0	10 0
Italian	0 0	0 0	0 0	0 0
Lemon Juice per deg.	75 0	80 0	80 0	83 0
Liquorice per cwt.	55 0	70 0	50 0	85 0
Spanish	2 6	2 9	3 4	3 6
Italian	1 3	1 4	1 6	0 0
Manna, flaky	18 0	30 0	17 0	27 0
small	11 0	13 0	10 6	12 6
Musk per oz.	16 0	17 0	17 6	19 0
Nux Vomica	0 0	0 0	8 0	15 0
Opium, Turkey	30 0	33 0	26 0	30 0
Egyptian	2 6	2 9	3 0	3 6
Orris Root per cwt.	85 0	90 0	170 0	190 0
Pink Root per lb.	0 9	1 6	0 8	2 1
Quassia (bitter wood) per ton	2 9	6 0	1 6	4 0
Rhatany Root per lb.	3 6	6 3	1 8	4 3
Rhubarb, China, round . . .	6 6	7 0	5 6	6 0
flat	12 6	13 0	12 6	13 0
Dutch, trimmed	23 0	33 0	40 0	42 0
Russian	140 0	145 0	130 0	140 0
Saffron, Spanish	1 0	1 5	0 10	1 4
Salep per cwt.	0 11	1 2	0 9	1 1
Sarsaparilla, Lima	0 11	1 6	9 8	1 3
Para	1 6	2 3	1 2	2 2
Honduras	14 0	15 0	20 0	0 0
Jamaica	32 0	38 0	27 0	36 0
Sassafras per cwt.	12 0	23 0	12 0	23 0
Scammony, virgin	3 0	3 3	3 6	3 9
second	0 0	0 0	0 0	0 0
Soneka Root	0 3	0 5	0 2	0 3
Senna, Calcutta	0 4	1 6	0 3	1 4
Bombay	0 3	0 8	0 3	0 8
Tinnevely	4 6	4 9	2 9	3 0
Alexandria	0 11	0 0	1 0	1 0
Snake Root	0 0	0 2	0 1	0 2
Spermaceti, refined	15 0	17 0	12 0	13 6
Squills	12 0	23 0	17 0	24 0
Tamarinds, E. India, per cwt.	21 6	30 6	22 0	26 0
West India	22 0	23 0	25 0	26 6
Terra Japonica—	20 0	30 0	20 0	40 0
Gambier per cwt.	26 0	38 0	20 0	30 0
Cutch	11 0	12 0	2 0	0 0
Valerian Root, English . . .	95 0	120 0	100 0	120 0
Vanilla, Mexican per lb.	30 0	85 0	15 0	65 0
Wormseed per cwt.	200 0	210 0	220 0	250 0
lump	190 0	220 0	190 0	210 0
Animi, fine pale	160 0	180 0	160 0	180 0
bold amber	100 0	150 0	100 0	155 0
medium	40 0	95 0	50 0	95 0
small and dark	85 0	95 0	65 0	70 0
ordinary dark	64 0	82 0	44 0	64 0
Arabic, E. I., fine pale picked	50 0	60 0	30 0	40 0
unsorted, good to fine . . .	25 0	40 0	15 0	30 0
red and mixed	120 0	160 0	115 0	170 0
siftings	65 0	110 0	50 0	110 0
Turkey, picked, good to fine	32 0	50 0	32 0	50 0
second and inferior	40 0	43 0	30 0	33 0
in sorts	74 0	78 0	52 0	58 0
Gedda	44 0	46 0	42 0	48 0
Barbary, white	37 0	45 0	36 0	38 0
brown	38 0	75 0	30 0	112 6
Australian	350 0	850 0	350 0	630 0
Assafetida, fair to good . . .	280 0	300 0	280 0	300 0
Benjamin, 1st quality	50 0	240 0	50 0	240 0
2nd „	72 0	80 0	90 0	95 0
3rd „	75 0	85 0	85 0	100 0
Copal, Angola, red	60 0	90 0	75 0	90 0
pale	0 4	1 0	0 4	1 0
Benguella	25 0	46 0	30 0	44 6
Sierra Leone per lb.	34 0	44 6	36 0	46 0
Manilla per cwt.	100 0	120 0	100 0	120 0
Dammar, pale	150 0	190 0	160 0	190 0
Galbanum	80 0	140 0	90 0	150 0
Gamboge, picked, pipe	0 6	1 6	0 6	1 5
in sorts	320 0	500 0	200 0	280 0
Guaiacum per lb.	20 0	40 0	40 0	50 0
Kino per cwt.	4 6	5 0	4 6	5 0
Mastic, picked	70 0	130 0	70 0	130 0
Kowrie per lb.	70 0	76 0	76 0	88 0
Myrrh, gd. and fine, per cwt.	53 0	68 0	48 0	70 0
sorts	18 0	40 0	16 0	35 0
Olibanum, pale drop	95 0	102 0	48 0	50 0
amber and yellow	75 0	95 0	82 0	107 6
mixed and dark	180 0	260 0	180 0	300 0
Senegal	100 0	130 0	100 0	130 0
Sandrac	£ s.	£ s.	£ s.	£ s.
Tragacanth, leaf	42 0	49 0	40 0	46 0
in sorts	64 0	66 0	80 0	0 0
Oils per tun	51 10	52 0	55 10	56 0
Seal	0 0	0 0	0 0	0 0
Sperm, body	42 0	48 0	42 10	43 0
Cod	35 0	0 0	38 10	0 0
Whale, Greenland	59 0	60 0	58 10	60 0
South Sea, pale	20 0	21 0	20 0	21 0
East India Fish	38 0	39 0	47 6	48 0
Olive, Gallipoli per ton	36 6	37 6	45 0	46 0
Florance, half-chest	32 0	37 0	40 0	44 0
Cocoonut, Cochln	36 0	0 0	39 0	40 0
Ceylon	0 0	0 0	0 0	0 0
Sydney	0 0	0 0	0 0	0 0
Ground Nut and Gin	0 0	0 0	0 0	0 0
Bombay	0 0	0 0	0 0	0 0

OILS—continued.

	1864.	1864.	1863.	1863.
	s. d.	s. d.	s. d.	s. d.
Madras per cwt.	37 0	38 0	40 0	41 0
Palm, fine	35 0	36 0	32 6	38 0
Linsced	34 0	0 0	43 0	0 0
Rapeseed, English, pale . . .	44 0	44 6	43 6	44 0
brown	41 6	0 0	41 6	0 0
Foreign pale	45 0	0 0	45 0	0 0
brown	41 6	42 0	41 6	0 0
Lard	46 6	47 0	44 0	45 0
Tallow	41 0	41 6	39 0	40 0
Rock Crude per ton	£17 0	0 0	£20 0	20 10
Oils, Essential—				
Almond, essential per lb.	0 0	0 0	19 0	0 0
expressed	1 0	0 0	0 0	0 0
Aniseed	6 2	6 3	6 3	0 6
Bay per cwt.	110 0	120 0	110 0	120 0
Bergamot per lb.	7 0	10 0	7 0	10 6
Cajeputa, (in bond)	0 2	0 2	0 2	0 2
Caraway per lb.	5 0	6 0	4 3	5 6
Cassia	8 3	0 0	9 2	9 6
Cinnamon (in bond)	0 9	3 0	1 6	3 6
Cinnamon Leaf	0 2	0 4	0 2	0 4
Citronel	0 5	0 6	0 4	0 5
Clove	0 2	0 4	0 2	0 4
Croton	0 9	1 0	0 0	0 0
Juniper per lb.	1 10	3 0	1 10	3 0
Lavender	2 6	4 6	2 6	4 6
Lemon	5 6	7 0	4 0	9 0
Lemongrass per oz.	0 10	0 11	0 7	0 9
Mace, ex.	0 2	0 3	0 1	0 2
Neroli	5 0	6 6	5 0	7 0
Nutmeg	0 1	0 2	0 1	0 2
Orange per lb.	5 6	6 9	5 0	6 6
Otto of Roses per oz.	16 0	24 0	14 0	22 0
Peppermint, per lb.				
American	12 6	13 0	9 0	15 0
English	34 0	36 0	34 0	36 0
Rhodium per oz.	0 0	0 0	3 6	5 6
Rosemary per lb.	0 0	0 0	1 8	3 0
Sassafras	2 9	3 6	3 6	4 0
Spearment	5 0	8 0	5 0	8 6
Spike	0 0	0 0	0 0	0 0
Thyme	1 9	2 3	1 9	2 3
PITCH, British per cwt.	12 0	0 0	12 0	0 0
Swedish	0 0	0 0	0 0	0 0
SALTPETRE, per cwt.				
English, 6 per cent. or under	29 0	30 0	37 0	37 6
over 6 per cent.	28 0	28 6	35 6	36 6
Madras	27 6	28 6	35 6	37 0
Bombay	27 0	28 0	34 0	36 6
British-refined	34 6	35 0	40 6	41 6
Nitrate of soda	15 6	16 6	15 0	15 6
SEED, Canary per qr.	0 0	0 0	33 0	50 0
Caraway, English per cwt.	0 0	0 0	28 0	34 0
German, &c.	0 0	0 0	0 0	0 0
Coriander	48 0	54 0	0 0	0 0
East India	0 0	0 0	0 0	0 0
Hemp	0 0	0 0	0 0	0 0
Linsced, Black Sea	60 0	61 0	60 0	61 0
Calcutta	55 0	57 0	62 0	65 0
Bombay	64 0	65 0	68 0	69 0
Egyptian	59 0	0 0	60 0	62 0
Mustard, brown per bshl.	10 0	12 0	10 0	14 0
white	9 0	12 0	10 0	12 0
Poppy, East India per qr.	51 0	52 0	53 0	0 0
Rape, English	0 0	0 0	0 0	0 0
Danube	0 0	0 0	60 0	0 0
Calcutta fine	56 0	57 0	63 0	54 0
Bombay	61 0	62 0	62 0	64 0
Teel, Sesmy or Gngy	54 0	57 0	60 0	66 0
Cotton per ton	130 0	140 0	150 0	160 0
Ground Nut Kernels	280 0	0 0	340 0	0 0
SOAP, London yel. per cwt.	20 0	34 0	22 0	36 0
mottled	34 0	36 0	36 0	38 0
curd	46 0	50 0	50 0	0 0
Castile	40 0	41 0	40 0	41 0
Marselles	40 0	42 0	40 0	42 0
Soy, China per gal.	2 10	3 0	2 1	2 3
Japan	1 5	0 0	0 10	1 0
Sponge, Turkey, fine picked	19 0	23 0	20 0	24 0
fair to good	7 0	17 0	8 0	18 0
ordinary	2 6	6 0	3 0	6 0
Bahama	0 4	1 3	10 3	1 8
TURPENTINE, Rough, per ct.	0 0	0 0	0 0	0 0
Spirits, French	63 0	63 6	73 0	74 0
American, in casks	0 0	0 0	0 0	0 0
WAX, Boos, English	170 0	175 0	170 0	175 0
German	162 6	185 0	162 6	180 0
American	175 0	0 0	165 0	175 0
white fine	0 0	0 0	0 0	0 0
Jamaica	180 0	195 0	167 6	175 0
Gambia	170 0	195 0	170 0	175 0
Mogadore	130 0	167 6	130 0	155 0
East India	150 0	180 0	140 0	180 0
ditto, bleached	200 0	230 0	170 0	230 0
vegetable, Japan	56 0	66 0	68 0	68 0
WOOD, DYE, per ton				
Fustic, Cuba	170 0	180 0	145 0	160 0
Jamaica	140 0	145 0	130 0	135 0
Savanilla	0 0	0 0	115 0	125 0
Zante	0 0	0 0	0 0	0 0
Logwood, Campeachy	190 0	210 0	205 0	220 0
Honduras	100 0	105 0	120 0	0 0
St. Domingo	87 6	0 0	90 0	0 0
Jamaica	82 6	83 0	85 0	87 6

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

INCORPORATION AND DEFENCE FUND.

(Continued from May 15th, 1864.)

	£	s.	d.		£	s.	d.
Alder, J. S., Newcastle-on-Tyne	0	2	6	Russell, C. R., Walworth	0	10	6
Arrowsmith, Mr., Newcastle-on-Tyne	0	2	6	Robson, Matthew, Howden-on-Tyne	0	5	0
Allin, G. W. L., Bristol	0	2	6				
Brockett, R. H., Newcastle-on-Tyne	0	2	0	Smith, J. T., Newcastle-on-Tyne	0	2	6
Boe, James, Newcastle-on-Tyne	0	2	0	Short, William, Bristol	0	5	0
Bell, J. W., Newcastle-on-Tyne	0	2	6	Sparrow, W. C. F., Pimlico	0	7	6
Bell, William, Newcastle-on-Tyne	0	2	6	Smith, T. W., Newington Causeway	0	5	0
Bolam, John, Newcastle-on-Tyne	0	2	6	Sowden, Samuel, Bradford	0	5	0
Brown, Mr., Newcastle-on-Tyne	0	2	6	Southam, George, Teddington	0	10	0
Beadell, Alfred, Newcastle-on-Tyne	0	5	0	Sheffield, on account per E. P. Hornby, Esq.	10	10	0
Burrell, John, Newcastle-on-Tyne	0	2	6				
Bogle, Robert, Mr. Taylor's, Radcliffe-bridge	0	5	0	Taylor, Gibson, and Co., Newcastle-on-Tyne	0	10	0
Beedle, G. C. R., Bristol	0	5	0	Troako, R. J., Clifton	0	5	0
Bransom, T., Bradford	0	5	0	Taylor, T. W., Westminster	0	2	6
Bransom, T., jun., Bradford	0	5	0	Taylor, Thomas, Westminster	0	5	0
Baneroft, Anthony, Halifax	0	5	0	Thomas, J. D., Bristol	0	5	0
				Tidman, William, Wormwood-street	2	2	0
Coxon, J., Newcastle-on-Tyne	0	2	6	Thorpe, Joseph, Grantham	0	1	6
Clarke, D., Woburn, Bedfordshire	0	5	0	Terry, Thomas, Bolton	0	5	0
Clarke, B., Bristol	0	1	0	Woodcock, Frances J., Hereford	1	1	0
Collins and Co., Bristol	0	2	6	Woodyatt, John, Hereford	1	1	0
				Wallis, E. S., Bristol	0	5	0
Dacres, Mr., Newcastle-on-Tyne	0	2	6	Warry, R., Bristol	0	2	6
Dean, E., Newcastle-on-Tyne	0	2	6	Webb, Fardon, and Co.	0	5	0
Downie, H., and Co., Newcastle-on-Tyne	0	5	0	White, J., Launceston	0	5	0
Dale, Samuel, Dover	0	5	0	Warren, Messrs., Bristol	1	1	0
Denham, William, Richmond, Yorkshire	0	5	0	Welberry, George, Retford	0	10	0
				Williams, Elias, Corwin	0	5	0
Elliott, James, Newcastle-on-Tyne	0	2	6				
Eno, J. C., Newcastle-on-Tyne	0	2	6	Per H. Gates, Esq., Hull:—			
Evans, Abdici, Ewell	0	5	0	Allinson, E.	1	1	0
				Akester, J. C.	0	5	0
Fairs, Joseph, Newcastle-on-Tyne (additional)	0	2	6	Bell, C. B.	0	10	6
Foster, Alexander, Rochester	0	5	0	Burn, J.	0	15	0
Fox, Thomas, Bradford	0	2	6	Billany, L.	0	5	0
Freeston, J. M., Westminster	0	2	6	Boston, G.	0	5	0
				Banks, R.	0	5	0
Gilpin, James, Newcastle-on-Tyne	0	5	0	Burton, T.	0	5	0
Gurney, R., Truro	0	5	0	Dobson, John	0	5	0
Griffin, George E., Bolton	0	5	0	Des Forges, J. H.	0	5	0
Griffiths, Thomas, Campden	0	5	0	Dyson, George	0	5	0
				Escreet, Mr.	0	5	0
Herring, Mr., Newcastle-on-Tyne	0	2	0	Field, Mr.	0	5	0
Henderson, James, Keswick	0	7	0	Fullam, William	0	5	0
Hickling, W. P., Bristol	0	10	0	Gates, Henry	0	5	0
Howell, William, Bristol	0	5	0	Grindall, W.	0	5	0
Hadfield, James, Rochdale	0	5	0	Gregory, G.	0	5	0
Horrell, A. E., Dartford	0	5	0	Gunnee, Samuel	0	5	0
				Green, E.	0	5	0
Jamay, John, Newcastle-on-Tyne	1	1	0	Green, R.	0	5	0
Ireland, William Egremont, Cumberland	0	5	0	Green, Alfred	0	5	0
				Hart, G. H.	0	10	0
Jones, John, St. John's-wood-terrace	0	2	6	Hickson, W.	0	5	0
Jones, R. G., Lye, Stourbridge	0	10	6	Hollingsworth, Mr.	0	5	0
				Hammoud, C. T.	0	5	0
Kellett, James, Wigan	0	5	0	Juble, E.	0	5	0
Kent, Alfred, Ramsgate	0	2	6	Killington, M. L.	0	5	0
				Kirkus, T.	0	5	0
Loye, P., and others, Plymouth	0	12	0	Moxon and Son	0	10	0
Lamb, John Robinson, Liverpool	0	5	6	J. G. Milner	0	5	0
Lyon, Robert, Ipswich	0	5	0	Noble, G.	0	2	6
				Officer, J. V.	0	2	6
Marley, John, Newcastle-on-Tyne	0	2	6	Preston, J. W.	0	2	6
Meyler, Thomas D., Haverfordwest	0	5	0	Robinson, A.	0	5	0
Marshall, C. E., Mile-end	0	5	0	Saltmer, James	0	10	0
Metcalf, Mr., Bradford	0	5	0	Stanning, William	0	5	0
Mathews, Henry, F.C.S., Gower-street	2	2	0	Shaw, W.	0	5	0
Mellin, Charles J., Wimbledon	0	10	0	Spencer, J.	0	5	0
Munday, H., Cheetham-hill, Manchester	0	10	0	Spring, Mr.	0	5	0
				Shepherdson, Mr.	0	5	0
Newman, J., Bristol	0	5	0	Toogood, Thomas	0	10	0
Noble, Mr., Newcastle-on-Tyne	0	2	6	Wilson, Richard Glew	1	0	0
				Windross, J.	0	2	6
Orchard, C. J., Bristol-bridge	0	5	0	Wheatley, W.	0	5	0
				Wokes, George	0	5	0
Pars, Robert Corelli, Thrapston, Northamptonshire	1	0	0	Woodruff, W.	0	5	0
Potts, Thomas, Newcastle-on-Tyne	0	2	6				
Pettitt, J. W., Tenterden	0	5	0	Chapman, W. F.	0	5	0
Parry, Edgar, Bristol	0	2	6	Chapman, E. J.	0	2	6
Peggs, James Orissa, Norwich	0	5	0				
Perkins, John, Wolverhampton	0	5	0				
Quarrington, William, Clifton, near Bristol	0	5	0				
Ridley, John, Newcastle-on-Tyne	0	2	6				
Redman, S., Bristol	0	5	0				
Rackham, H., Dunstable	0	5	0				

OMISSIONS IN ANNUAL REPORT.

Benevolent Fund.

Bush, Thomas, Foulton	0	5	0
Hunter, Thomas, North Shields	0	5	0
Hunter, Mr., per Mr. Gates	0	5	0

Members.

Roberts, J., Milk-street.	Hunter, Thomas, North Shields.
Owen, Walter, Sheffield.	Booth, Richard, Hanley.
Moore, W. H., Bradford.	Hammer, John, Pendleton.
Doriot, Thomas J., Bristol.	Smith, L. J., Sleaford.

